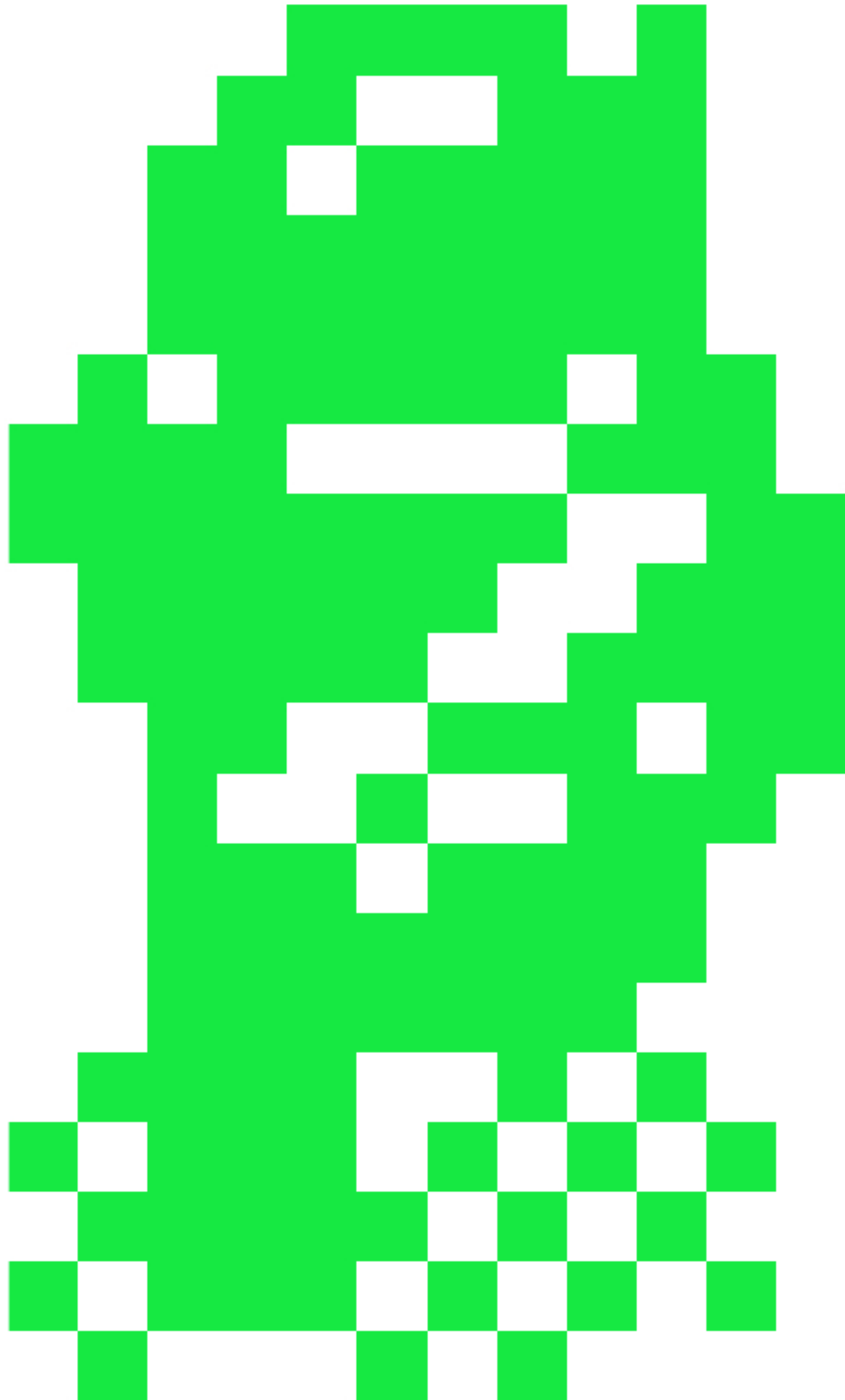


04

Spectrum computing today



PRICE LIST (prices checked 30 March 2003)



New hardware:

PC-PSU with supply for 2 Floppies and MB02	36,00 €
MB02-Printerlead	13,00 €
Spectrum +2A, new and original package, complete	219,00 €
Proface AT Extern (Interface for connecting PC-Keyboards to Spectrum)	69,00 € KS
Proface AT Intern (internal interface)	62,00 € KS
Melodik AY-Soundbox (unboxed)	24,00 € KS
+2 Cassette recorder	36,00 €
Floppy Disc drive (1,86 with MB02, 720k with Opus, 780k with +D) Please specify	24,00 €
PSU for +2A/B and +3 or PSUI for +2 (also 48k and 128k) Please specify	29,00 €
FDD lead for 2 drives	4,00 €
Multiface 128 (works also on 48k Spectrums)	26,00 €
Multiface +3	46,00 €
Dust Cover 48k+/128k	8,00 €
Plus 3 Tapelead	9,90 €
Normal Tapelead	3,00 €
Spectrum +2 Lightpen	36,00 €
Spectrum +3 Lightpen	27,00 €
Phaser Gun with Software (Tape or +3)	19,00 €
VGA-BOX (connect Spectrum 128/+2 to VGA monitor)	49,00 €

Used hardware:

Sinclair ZX Spectrum 128k, complete with all cables	129,00 €
Sinclair ZX Spectrum +2, complete with all cables	79,00 €
Sinclair ZX Spectrum +2A, complete with all cables	79,00 €
Sinclair ZX Spectrum +3, built in 3" drive, complete with all cables	99,00 €
Sinclair Spectrum 48k (Gummy), complete with all cables + Introduction Tape	64,00 €
Sinclair Spectrum 48k +, complete with all cables + Introduction Tape	64,00 €
+3 Drive (tested)	29,00 €
Interface I	69,00 €
Microdrive	25,00 €
Wafadrive	39,00 €
Opus Discovery Diskinterface with 1 x 720k Drive (new ROM)	119,00 €
Plus D clone without case, 3.5" floppy with PSU and cables	129,00 €
Joystick interface	1-Port 3,00 € 2-Port 11,00 €
Joystick (many different)	2,50 €
Sinclair SJS-Joystick (+2/+3)	6,00 €

Consumables:

Microdrive Cartridges (ex-software)	3,50 €
Wafadrive Cartridges	16K= 7,00 €, 32K= 7,50 €
+3 drive belt	2,00 €
Silver paper for ZX Printer	5,00 €
Keyboard membrane 48k	11,00 €
Keyboard membrane Spectrum +/128k, new quality, not aging	21,00 €

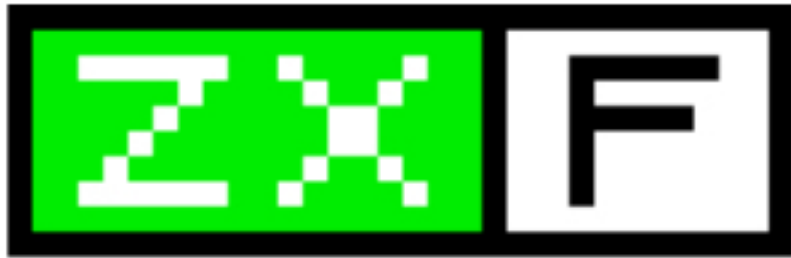
Also we have a lot of Software offers and books. Please contact us and we will send you our pricelist.

Products marked KS are sold in the name of Kompakt Servis. We organise the business.

Prices excluding postage. Delivery as long as stock lasts.

Orders to: SINTECH, Gastäckerstr. 23, 70794 Filderstadt, Germany

Tel./Fax: 0049 711 775033 email: sintech@online.de <http://www.sintech-shop.de>



Spectrum computing today

SPRING 2003/Issue 4

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If you enjoy ZXF and you want it to continue then consider yourself duty bound to let me know this (mail@cwoodcock.co.uk). All other feedback will be gratefully received also - criticisms (please be kind), improvement suggestions and notifications of any errors you think you've spotted are essential for this sort of project to succeed.

If you would like to contribute to future issues of ZXF - even if it's just to write a letter - **please do**; contact me again by the email address above.

Editor: Colin Woodcock (mail@cwoodcock.co.uk)

Website: www.zxf.cjb.net

Contributors this issue: Andrew Owen, John King, Thomas Eberle, Brian Gaff, Roelof Koning, Tommy Pereira and Nando Turco. Thanks also to Jonathan Needle, Paul Dunn, Mark Woodmass, Derek Jolly and LCD.

A new year. A new ZXF, produced - I might add - using new DTP software and a new PDF conversion program (hence the new look). And I'm pleased and proud to announce a new ZXF website to promote and complement the magazine.

New spectrum software from a new eight-bit software label is reported on this issue, which is very exciting indeed. We've also previews of upcoming new releases of **SPIN** and **Spectaculator**, both of which are rather good, as usual. You'll find also an in-depth feature on SE BASIC, Andrew Owen's new ROM for the Spectrum and other Z80-based machines. And Sir Clive Sinclair, through the enduring **Sinclair Research**, has finally released a new product. It's not a computer, but it's innovative.

Meanwhile, in the world at large, there's a new war going on, employing all the latest new technology and terminology in the fight against the new terrorist threat. 'Liberation' is the new word for invasion. 'Civilian casualties' is the new term for innocent blood on our hands. It appears that the war is going more slowly than the US and UK planners had predicted; this is largely, it seems, due to unanticipated levels of resistance from the Iraqi people. We had hoped they would welcome us...

...And how is that, exactly, when we're killing their loved ones, be they 'civilian casualties' or just regular soldiers doing the job they've been told to?

The war and its weapons might be new, but the cycle of violence is centuries old and just refuses to die. The mounting anger of the Iraqi people and their neighbours is no new insight into human behaviour; neither is the naivety of the leaders who thought that better targeted bombs would win over 'hearts and minds.' And it's also nothing new that we, the human race, are astonishingly good at realising the benefits of the three main sciences and casting aside everything that the fourth - psychology - has known for decades when it doesn't suit our purposes.

The military outcome of the *current* war seems inevitable, since I think it's safe to say that no-one is going to back down after coming this far. It's stated purpose, however, was to make the world a safer place and that outcome seems much less likely. Terrorism begins in anger, and there are now more angry, *angrier* people than there were before it started. It's not rocket science; it really is that simple.

What's not simple, of course, is what we actually do if we reject war as the solution.

Following the terrible events of 11 September **Steve Hein** of **The EQ Institute** (<http://eqi.org>) wrote:

"if we were to go to the villages where they are celebrating the recent events and give people a chance to talk to us for one week, without judging them or invalidating them, they would no longer feel a desire to celebrate death. They would feel understood. [...] Threatening to punish people creates feelings of fear and defensiveness. It will not create empathy. This is such a simple principle of human nature. But it seems that it is one which was never taught to our world leaders."

Would this be a better way of trying to resolve our conflict? I doubt that, by itself, it would represent a solution; it would only be a start. But returning to the age-old tactic of fighting fire with fire is not even a single step in the right direction. This is not about political orientation, it's about recognising a flawed idea as being a flawed idea. It will not work, and when are we going to realise this?

I love technology - old and new - but I don't for a moment imagine that any of it represents any genuine move forward in the development of the human race. For the most part, it just helps us to do the stuff we did before more easily. The Internet offers us the

choice to learn new things, but we have to desire to learn them. Communications technology more generally offers us the opportunity to talk to more people, but we have to want to know them. If ever a change comes about that's been really worth the wait it will be in our thinking... as people... about people.

I could go on, but you've a Spectrum magazine to be reading and I'm running out of space. As the editor of ZXF I hope very much that you enjoy this issue as much as you have indicated you enjoyed reading the previous three. As a psychologist I urge you to check out Steve Hein's site and his current, moving words about the conflict. Think some new thoughts; the world might seem more grey and complex and confusing, but if that's the way it actually is, why fool yourself into believing it's black and white?

Until August,

Colin Woodcock

mail@cwoodcock.co.uk





WDU • CSS FAQ • MICRODRIVE PRESERVATION • DEMOTOPIA •
YASPIC • MICRO MART COMPETITION • SPECTACULATOR 5 •

New Sinclair Product

Not the proposed 'ZX2000' that we all read about a few years back, our hearts skipping a beat as we did so. Nope. Instead Sinclair's latest offering, alongside his miniature radios X1 (world's smallest FM radio) and Z1 (world's smallest AM radio), is a new wheelchair accessory designed to take the pain out of slopes for the carers who get to do the pushing. Yes, the *Wheelchair Drive Unit* (WDU) is what that cryptic "watch this space" message added to the Sinclair Research website (www.sinclair-research.co.uk) a few weeks ago was all about. The tease.

Priced at £299 and the result of a five-year £500,000 development programme, the WDU is "designed to provide electrically powered 'pushing assistance' for most common domestic types of folding and rigid attendant propelled wheelchairs" and is "targeted as a radical departure in the provision of wheelchair facilities for the disabled."

Websites remade

The review of the **comp.sys.sinclair** FAQ reported on last issue is now complete, and a brand new version of what was already an immensely comprehensive resource has now been published at **www.sinclairfaq.com**.

Courtesy of the CSS *FAQ Maintenance group*, this is a very significant and extremely professional update which incorporates most of the old (and still relevant) information alongside new content that informs on the many recent developments across the Sinclair scene, such as the new generation of emulators and alternative ROMs. Aiming to become "the accepted reference point for virtually any topic related to the use or emulation of many products produced by Sinclair Research, and several others, during the 1980s", the FAQ is subdivided into the five main areas of *Documents*, *Essential sites* (to my immense pleasure, this category includes the ZXF website), *Emulators*, *Links* and *Resources*. The site also now includes a new help area.

The new FAQ is due to be updated on a regular basis and

there will also soon be made available off-line versions, including a PDF version currently under construction. And if you have any feedback to offer on the new design, the group are eager to read any comments you might have: just post them to **cssfaq@sinclairfaq.com**.

Meanwhile, two other well-established Spectrum sites have also had makeovers, namely Matthew Westcot's **Demotopia** (**www.zxdemo.org**) - *the* place on the net for all those amazing Spectrum demos - and icabod's **www.raww.org** Spectrum demoscene and news website. They both look very glossy indeed.

RAWW.ORG • SINTECH • VBSPEC 1.70 • BASIN • BMP2SCR PRO •
SPIN 0.5 • IDSA • MORE...

And on the subject of websites, ZXF itself has had an HTML makeover - but you probably already know that, seeing as how you had to go there to get hold of these very pages...

The new ZXF site is a fairly major upgrade on the couple of pages that hosted our humble little magazine previously. As before, it is a part of **www.cwoodcock.co.uk** (host also to my other main site *Free Novels Online*, my own novel and various other bits and pieces), so if the pop-under ads and Gathor installers that are an unfortunate consequence of the *cjb.net* address (ie, **www.zxf.cjb.net**) become too much to bear you can always bookmark **www.cwoodcock.co.uk** (which is paid for) and make your way to ZXF from there.

In addition to HTML versions of previous articles and interviews, the site also offers some new on-line resources, my particular favourite (even if I do say so myself) being an HTML version of the January 1984 *ZX Spectrum Software and Peripherals Catalogue* (page 4 is pictured right). Each page of the catalogue has been lovingly (and I do mean *lovingly*) recreated in HTML, with **WoS** download and customised **ebay.co.uk** search links added in for each title. My hope is to add in inlay scans and instructions over time too.

www.cwoodcock.co.uk
[ZXF](#)
[fno](#)
[Romania](#)
[my novel](#)
[emotional literacy](#)
[OTHER](#)





Spectrum computing today

[home](#)
[exp](#)

Software and Peripherals Catalogue - Jan 1984

page 4

Education 1

In the classroom and at home, software has an important role to play in every aspect of a child's education.

Educational titles in this section have been written to high standards of performance and quality. All the programs for younger children use entertaining characters, combined with sound and colour, to teach fundamental skills in a lively and enjoyable way.

Learn to Read 1 (E11/5)

Learn to Read 1 is designed for children who are just beginning to read. It is in four parts, each of which develops skills central to the reading process - letter recognition, sight vocabulary, early spelling and memory. The program is full of colour and fun and children will enjoy learning to read as they meet the animal characters - Ben the dog, Jip the cat and their friends.

Full-colour high-resolution graphics with sound.
Written by Fisher-Marrillott Software for a 48k RAM Spectrum.

Boxed cassette with full documentation, price £9.95.
[Download \(WoS\)](#)
[Check ebay.co.uk](#)



Learn to Read 2 (E11/5)

Learn to Read 2 is in four parts, each of which reinforces and extends the fundamental reading skills practised in the first program - word recognition, early spelling and memory - as well as encouraging logical thinking. The child's vocabulary is gradually built up as new words such as 'red', 'green', 'car', 'ship' and 'bus' are introduced. In addition, Learn to Read 2 features an attractive 'reward' system enabling children to see their achievements grow.

Full-colour high-resolution graphics with sound.
Written by Fisher-Marrillott Software for a 48k RAM Spectrum.

Boxed cassette with full documentation, price £9.95.
[Download \(WoS\)](#)
[Check ebay.co.uk](#)



Learn to Read 3 (E12/5)

Learn to Read 3 builds on the child's progress so far. It is carefully designed to extend the basic skills practised in the first programs, so that he or she can gain the confidence to move on through the complex reading process. Learn to Read 3 features four lively, colourful activities:

- None** introduces further simple vocabulary.
- Kim** provides good practice in logical thinking and recall, both of which are so important in reading.
- Spell** helps the child to choose between words which sound similar.
- Card**, a computer version of the popular card game *Patmanism*, helps to develop memory skills.

Once the Learn to Read 3 program is mastered, the child is reading more than 20 words.

Full-colour high-resolution graphics with sound.
Written by Fisher-Marrillott Software for a 48k RAM Spectrum.

Boxed cassette with full documentation, price £9.95.
[Download \(WoS\)](#)
[Check ebay.co.uk](#)







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[next page >](#)

Yet more graphics

Jamie Tejedor Gomez, better known to us all as **Metalbrain**, just keeps churning out the **SevenuP** updates. The latest versions have added in sprite support now, as I believe was the original intention. (Sprite - Seven Up... get it?)

www.speccy.org/metalbrain/

Meanwhile, **Derek Jolly** (author of the raunchy *Top Shelf Challenge* range of **CSSCGC** titles and a letter last issue referring to his online tutorial on creating Spectrum SCREEN\$ with **bmp2spec** and the **GIMP**) has created his own graphics app.

"Not another Spectrum Picture Converter!" I hear you cry. Yes indeed, and this one is particularly easy to use. Specialising in generating highly effective black and white dithers (which you can then colour), **YASPIC** (Yet another Spectrum Image Converter) proves conclusively there's always an unfilled gap to be found. It's blimmin' superb, and it lives at rivet.50megs.com/speccy.html

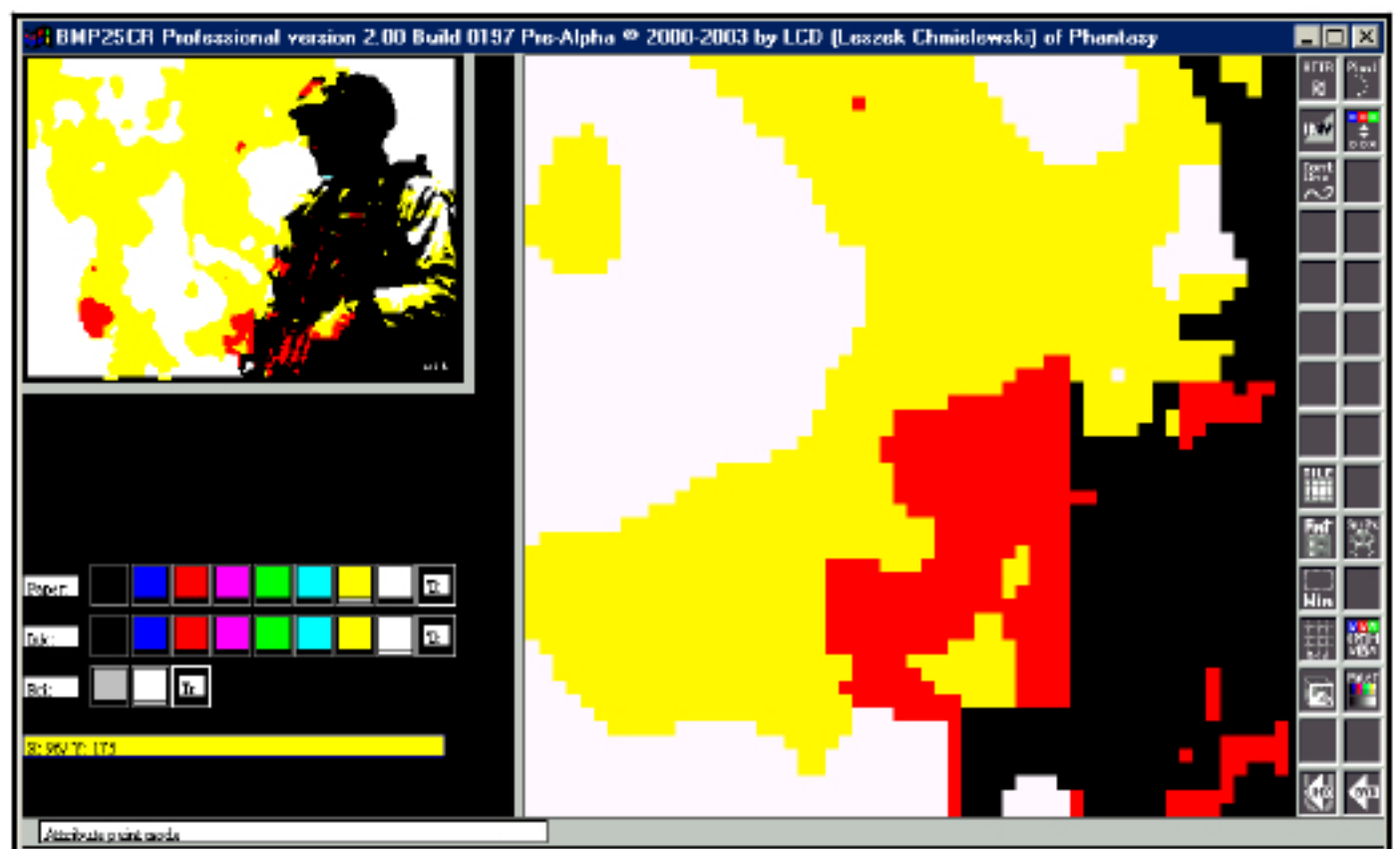
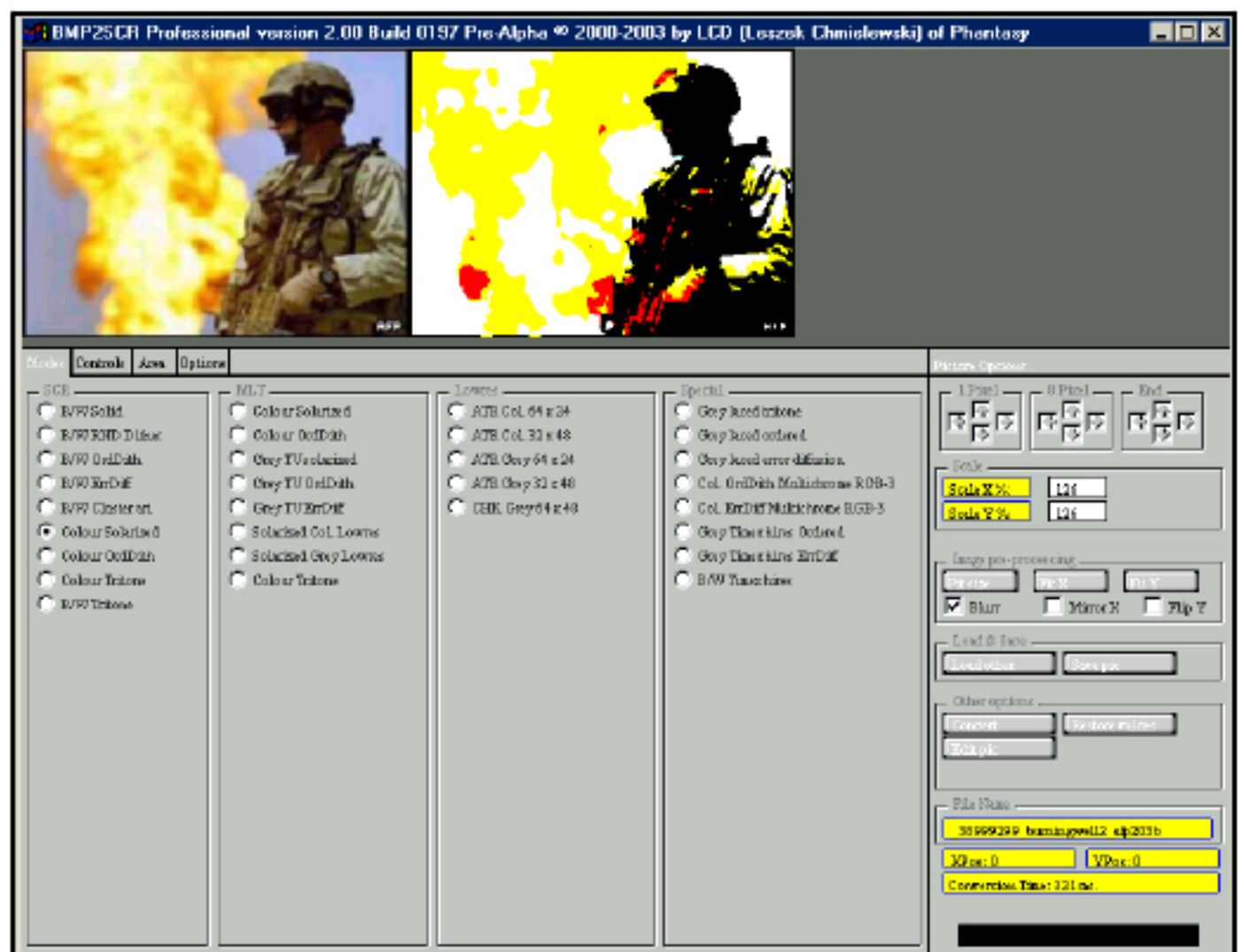
Keen to plug his new baby, Derek compiled a .TAP file of pictures taken of a recent **css** meet in London. Feast your eyes on the results...



Readers of the loading screen tutorial in issue 2 will know that I am also something of a fan of LCD's **BMP2SCR**. LCD has been talking in recent months about a new version of this program, **BMP2SCR Pro**. And now it's ready.

A couple of weeks ago, Kindly LCD sent ZXF a pre-release copy of the program to look at. Where do I begin? Whilst the user interface might send the meek running for cover, this is an *extremely* comprehensive program that covers just about every aspect of Spectrum graphics that I for one can think of. Conversion from PC graphics is, of course, at the very top of the list, and now there's an even bigger selection of methods to take you to a great-looking SCR, which you can then modify as appropriate using the improved built in editor. And there's much, much more besides this.

BMP2SCR Pro requires Microsoft DirectX 8.1 or above. Get it at: <http://members.chello.at/ursula.chmielewski/bmp2scr.htm>





SOS ZX

Hi there - I just picked up a boxed Spectrum for only £99 on ebay: the last time the seller used it (that glorious summer of 1990) it was working fine - imagine my surprise and disappointment when I plugged it in and got a screen that looks like my car number plate after a 70mph stretch up the M3. Anyone got any ideas on how to fix these things? By the way - I'm certain it's not the keyboard membrane because I looked through the edge-connector gap in the back with my bendy supervision and this appears to be in absolutely MINT condition!

Those poor unfortunate souls, those victims of the casual browse through the vintage hardware section, caught, hooked and conned by an @ - enhanced listing, might finally have a saviour. Known to **WoS Forums** only as **GP**, one Spectrum enthusiast has resolved to set up a new repair service. It's not yet ready, but there's a web page up already and by the looks of things **retro.spect** is already taking enquiries.

<http://homepage.ntlworld.com/retr o.spect1/>

New retro Software house

It's all rather exciting. **Cronosoft** (www.cronosoft.co.uk) is a new software publisher of new games for old platforms.

Cronosoft has been set up by Simon Ulliyatt, webmaster of www.retrogamez.co.uk, and has already released a revamped version of Jonathan Cauldwell's **Egghead 3** (see **load**). Here's how the original webpage at <http://homepage.ntlworld.com/simon.ullyatt/page23.html> described how the system will work:

Have you written a game for an old computer? Would you like to see it published? But ... you've missed the boat by 20 years?

Well... help is at hand! This is our plan...

We'll take your game, evaluate it, duplicate it, print inlays for it, and sell it for you.

For every copy we sell, we will pay you a royalty based on a percentage of the final sale price.

We'll advertise the game on our website, and we'll sell it via EBAY auctions too.

We intend to sell all of our games for between £1.99 and £2.99 GBP each

Here's how the costs breakdown:

FOR A £1.99 TITLE:

Duplication of tapes, plus colour inlays and advertising £0.99

Royalty for each unit sold at 25% = 50 pence to the game author

Profit for us at 25% = 50 pence to the software house

If we sell at a higher price, then the royalties are higher. YOU WILL GET 25% OF THE SALE PRICE - GUARANTEED!

Of course - you're not gonna get rich, and neither are we, but you will get the fame of being part of gaming history!

We'll only be doing short runs - 50 or 100 of each title to begin with, but we can get more done if sales prove popular.

Cronos are looking for software for the following formats:

- SPECTRUM - ZX81
- VIC 20 - C64
- ORIC -1/ATMOS - DRAGON 32
- TANDY COLOR - AMSTRAD CPC
- BBC/ELECTRON - TEXAS TI-99
- COM'DORE 16 - SHARP MZ

If you have a game you'd like to sell, you can contact Simon at chaosmongers@yahoo.com.

.MDR preservation

Is it me or does ZX Spectrum Man below bear an uncanny resemblance to a certain Mr gates? Anyway, as Spectrum Man will tell you, "no other home computer can match the performance of a complete, powerful Spectrum system." And by complete, we mean of course complete with *Microdrives*: we'll have none of that disc drive nonsense around here thankyouverymuch. Connecting via the ZX Interface 1 (and did you know that *that* was originally to be called the 'ZX Expansion Module'? Catchy) and providing up 680K of online, fast-access storage (well, if you had eight of them connected together, that is), the ZX Microdrive is one of those Spectrum features that just puts it head and shoulders above the rest when it

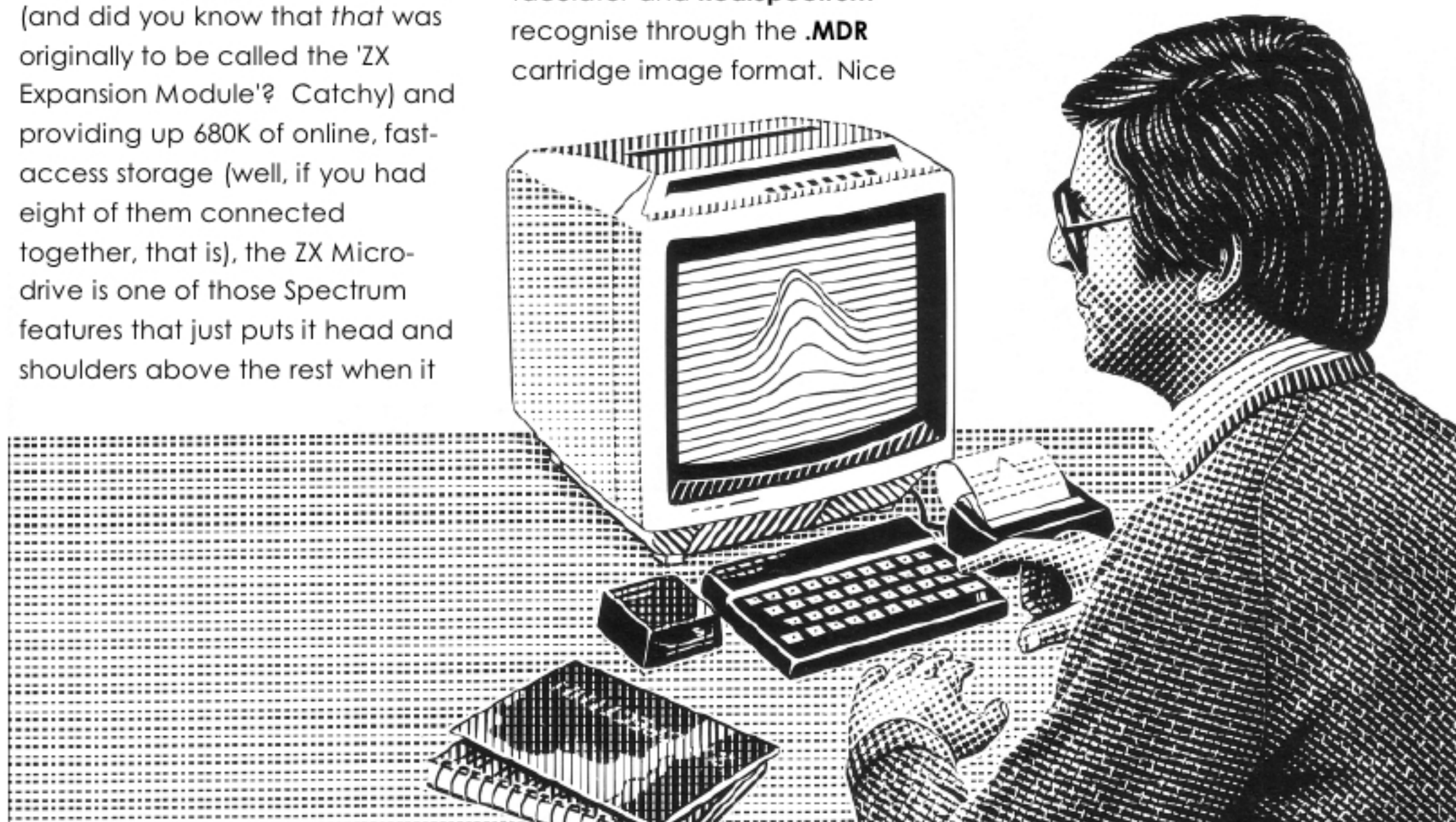
comes to retrospective. It just positively oozes those Sinclair hallmarks of 'cheap,' 'unreliable' and 'downright beautiful'.

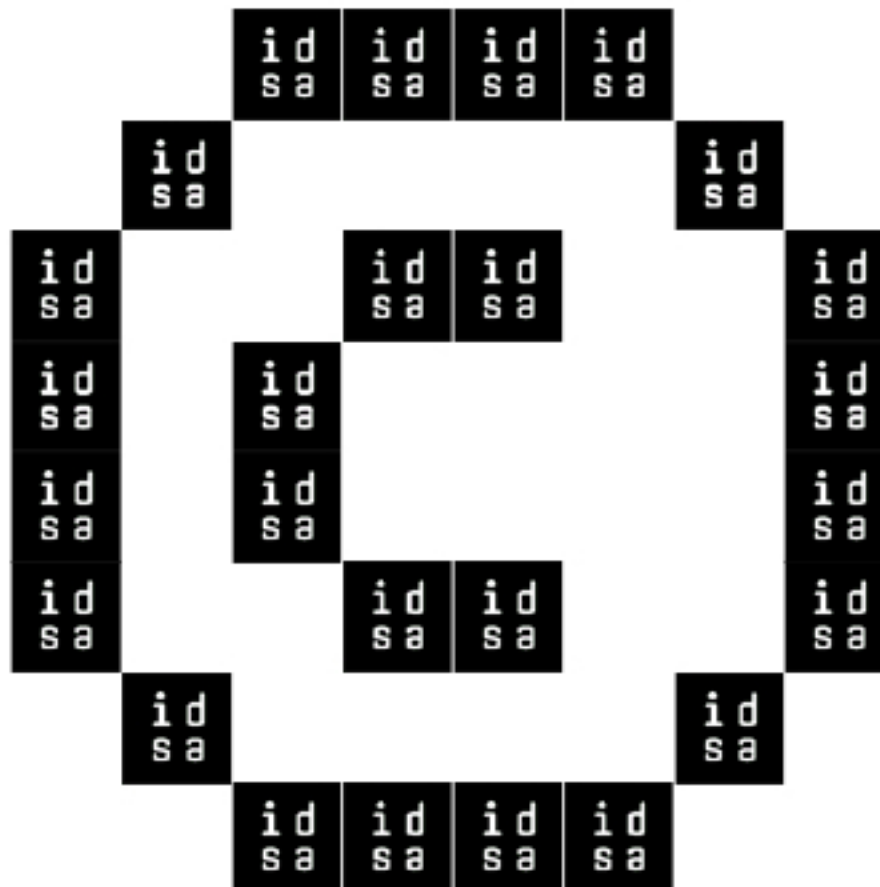
And now that **Spectaculator 4** supports it (see *emulator news*), a call has been made to start cataloging all the software designed for it, in particular software actually released and sold on microdrive cartridges, which emulators such as Spectaculator and **RealSpectrum** recognise through the **.MDR** cartridge image format. Nice

man Geoff Wearmouth has already started converting cartridges, with the original introductory cartridge currently available at www.wearmouth.demon.co.uk/srlintro.zip

Now what I want to see is an IF1 supporting emulator that you can actually connect to a real Spectrum + IF1 via the ZX Net.

Anybody?





IDSA Visits WoS

Oh, the irony. The World of Spectrum website, perhaps the only online retro software archive to take software piracy seriously, has received a letter from the **Interactive Digital Software Association** (IDSA). WoS maintainer, Martijn van der Heide, has spent the past few years actively seeking distribution permission for archived titles (as opposed to the "if any of this belongs to you and you don't want it here, email me" line at the bottom of the screen), contacting a seemingly endless list of publishers and authors, each of whom has been painstakingly tracked down through solid, determined Internet detective work (the problem is that many of the old Spectrum software houses either no longer exist or were acquired by other software houses who were then acquired by other software houses); all of this correspondence is published at WoS; in the few cases where distribution has been denied, the titles have been removed without question. And Martijn is quite outspoken on these issues: "Can we blame the copyright holders for their actions?" he asks, "I dare to say no!"

But all of this, it appears, is of no consequence. Either the IDSA didn't read any of it or it was simply deemed irrelevant. Unfortunately there's no real reason to suppose any of it makes one iota of difference to them, since their views on emulation and

software distribution are quite clear: it's not legal, end of story. Well actually, in the case of Spectrum emulation, at least, it is legal, since Amstrad have granted distribution permission of the Spectrum ROMs. as for the software titles, however - particularly those where distribution permission has not yet been obtained (but neither denied) - it's a different matter entirely.

The IDSA was set up in 1998 to protect its members intellectual property through the enforcement of copyright laws and has since been successful in shutting down a number of retro-software sites. Will WoS go the same way? We are still waiting to hear what their response to Martijn's reply will be.

The IDSA's letter has caused something of a stir, and you can read reports on it at:

<http://slashdot.org/article.pl?sid=03/02/28/0747252&mode=thread&tid=133>

and at:

<http://www.theregister.co.uk/content/4/29646.html>

Meanwhile, if you haven't yet read either of the letters, here they are. See what you think (and check out **wibble** to see what others are saying).

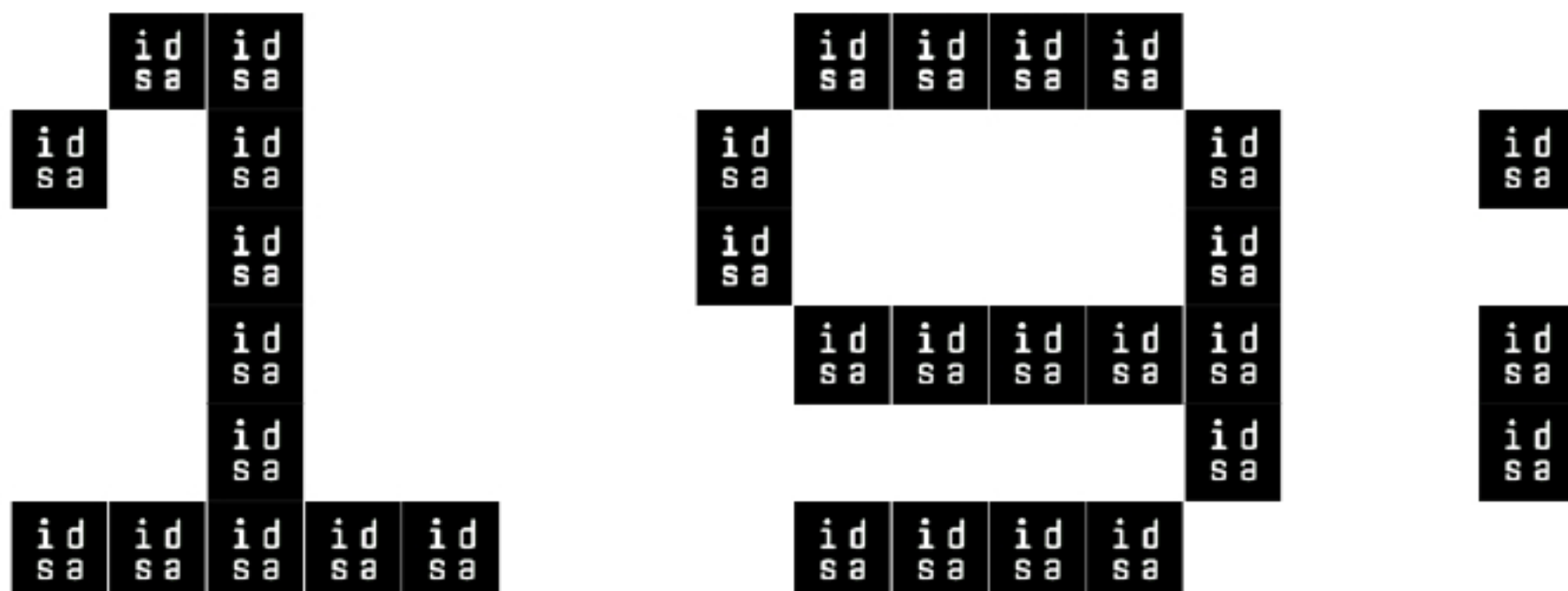
From: dmca@idsa.com.no.junk.mail
 To: abuse@xxxxxxxxxx
 Subject: Berne Convention - Demand for Immediate Take Down - Notice of Infringing Activity - Reference#: 922932
 Date: 14 February, 2003 5:23 PM

Dear abuse@xxxxxxxxxx,

I am an authorized representative of the Interactive Digital Software Association ("IDSA"), which represents the intellectual property interests of almost thirty companies that publish interactive games for video game consoles, personal computers, handheld devices and the Internet.

IDSA is providing this letter of notification to make xxxxxxxxxx aware of material available via its network or system that infringes the exclusive copyright and trademark rights of one or more IDSA members. This notice is addressed to you as an agent of xxxxxxxxxx for purposes of receiving notifications of claimed infringement. We hereby affirm that the IDSA is authorized to act on behalf of the IDSA members whose exclusive copyright rights we believe to be infringed as described herein.

Based on the information obtained by IDSA that is provided in this e-mail's attachments, IDSA has a good faith belief that the Internet site found at <http://www.worldofspectrum.org/> infringes the rights of one or more IDSA members by offering for download one or more unauthorized copies of one or more game products



protected by copyright, including, but not limited to:

007

Barbarian

Donkey Kong

Frogger

Mario

Pac Man

Soldier Of Fortune

Through the Berne Convention and other international treaties covering intellectual property rights, we believe that our members' rights in such games are entitled to the full protection of the intellectual property laws of your country.

The unauthorized copies of such game product[s] appearing on, or made available through, such site are listed and/or identified on such Internet site by their titles, variations thereof or depictions of associated artwork (any such game titles, copies, listings and/or other depictions of, or references to, any contents of such game product, are hereinafter referred to as "Infringing Material"). Based on the information at its disposal on 2/7/2003 6:49:39 PM GMT, IDSA believes that the statements herein accurately describe the infringing nature and status of the Infringing Material.

Accordingly, IDSA hereby requests xxxxxxxxxx to immediately remove or disable access to the Infringing Material at the URL address identified above.

Should you have questions, please

contact the IDSA at the above listed mailing address or by replying to this email. Please also include the above noted Reference Number in the subject line of all email correspondence.

We thank you for your cooperation in this matter. Your prompt response is appreciated.

Regards,

Robert L. Hunter, IV

Interactive Digital Software Association

From: Martijn van der Heide
<mheide@worldofspectrum.org>

To: dmca@idsa.com.no.junk.mail

Subject: Your reference #922932

Date: Mon, 17 Feb 2003 12:54:02
+0100 (CET)

Dear Mr Hunter,

Thank you for your email dated 14th February 2003, 5:23PM CET. The World of Spectrum archive site at <<http://www.worldofspectrum.org/>> is a software preservation site, archiving software for the classic microcomputer, the Sinclair ZX Spectrum.

We strive to gain permission for redistribution for all software in the archive from the original publisher, and if the publisher no longer exists, from the original author. We publish all such permits on our site, and where such permission has been rescinded by either the publisher

and/or author, we comply and remove the affected titles from the archive. Our copyrights policy is available in a dedicated section of the site, the Copyrights section, at www.worldofspectrum.org/permits/.

To this end, we take all allegations that we are carrying software to which we do not have permission very seriously, however, the list of titles provided to us by yourselves is unfortunately somewhat vague, and we believe there may in fact be 'false positives', with titles in our archive of old software originally made during a period between 1982 to 1992 matching currently available software. An example is the title 'Soldiers of

Fortune', for which we have explicit formal permission from the publisher Firebird Software Ltd (a label from British Telecom).

If there is indeed clear and present proof that the titles you specifically list are present in our archive, we will be happy to remove those titles to endeavour to retain the goodwill we have in the industry and our position as being responsive to creators requests. To this end, could you please provide further information on the titles you have listed, such as publisher (or relevant IDSA member), release date, platform and so on, so that we can properly investigate and expedite this request.

Thank you for bringing this to our attention.

Yours sincerely,

Martijn van der Heide



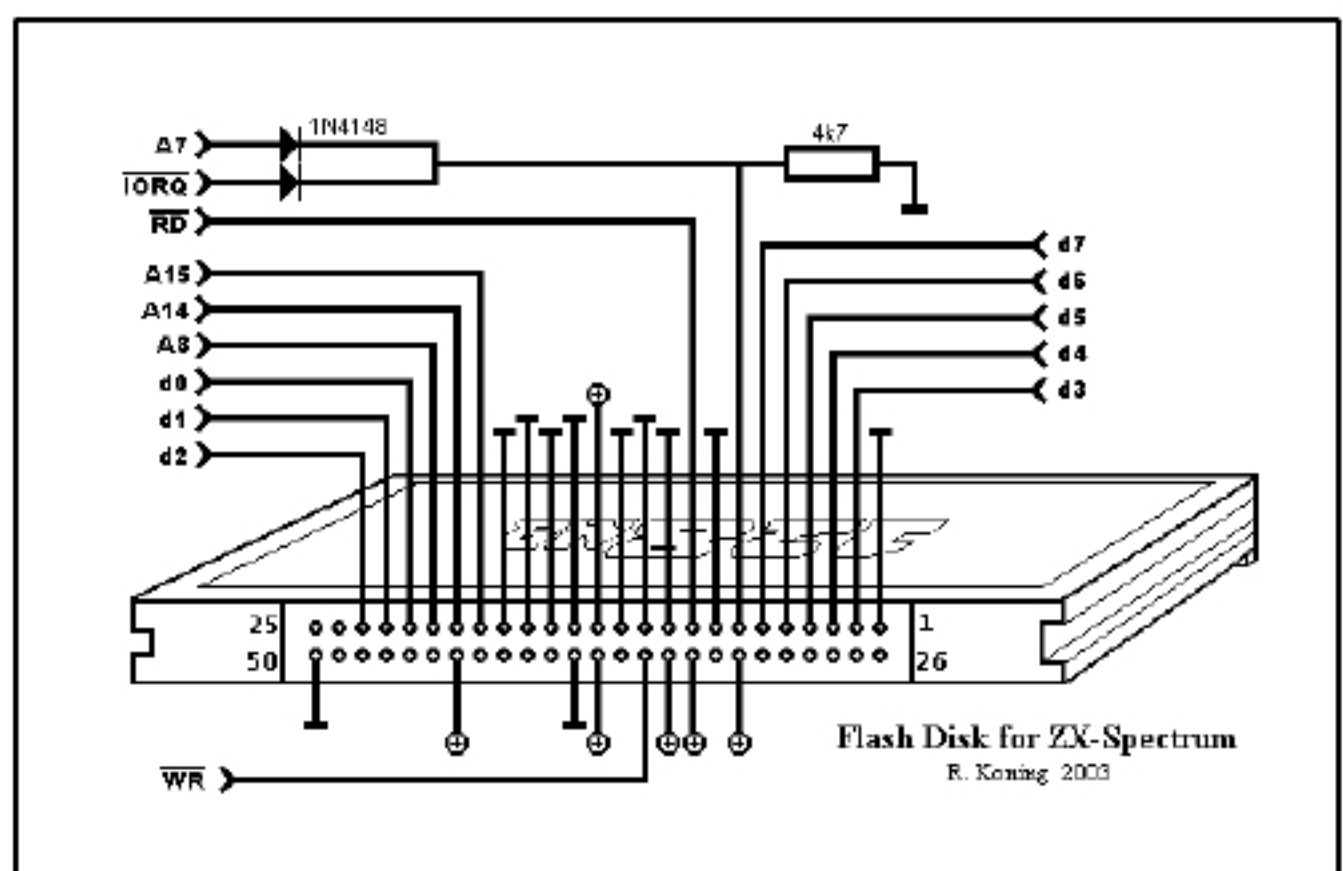
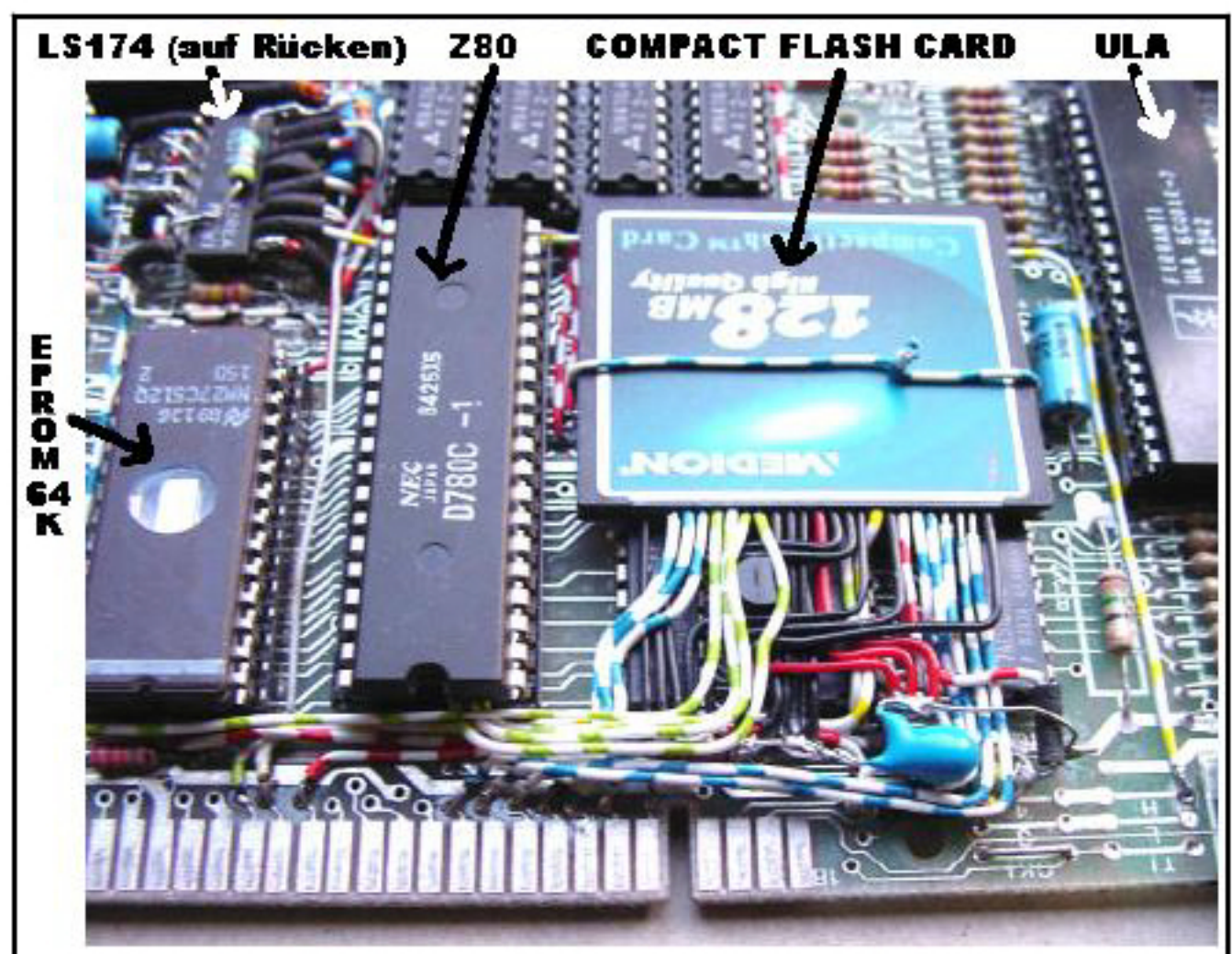
Another Super Spectrum?

I'm a hard old bugger to please. Much as I like the idea of a Spectrum hard disk, the aesthetics just put me right off it. A whopping great hard disk plugged into my slim-line Spectrum (and let's not forget the PC Power supply it's going to need) just simply isn't my idea of Sinclair. I want a mass storage device *inside* my Spectrum.

Impossible? Not if you think *Compact Flash Card* technology instead of hard disk. With up to 128Mb of storage capacity, that will more than serve. And Roelof Koning from Holland has gone and designed just such a system.

Such matters are generally well over my head, so across the page you'll find Roelof's own description of his system. He also told me: *"You can see there really is nothing in it (but a lot of thought!). Instead of using a male connector, I choose wires that fitted nicely in the female connector of the CF Card. So soldering was just on the other end, but still a brainsurgeon's job."*

I really need to learn how to solder...



FLASH DISK for ZX SPECTRUM 48K

Here below is shown how I connected a Compact Flash Card to the Spectrum, using the so called Memory Mapped Configuration. Due to the design of the CF-Card no further interfacing is needed. This diagram results in the following I.O. ports:

Offset	A7	A15	A14	A8	Port	/RD=0	/WR=0
0	0	0	0	0	127	Even RD Data	Even WR Data
1	0	0	0	1	383	Odd RD Data	Odd WR Data
2	0	0	1	0	16511	Sector Count	Sector Count
3	0	0	1	1	16767	Sector No.	Sector No.
4	0	1	0	0	32895	Cylinder Low	Cylinder Low
5	0	1	0	1	33151	Cylinder High	Cylinder High
6	0	1	1	0	49279	Head	Head
7	0	1	1	1	49535	Status	Command

Notes:

Sector size = 512. Because of the possibilities for 16-bit operations the data bytes can be regarded as odd and even bytes. After register (0) is accessed to read the even byte, the odd byte is copied there. So every 'odd' read this byte can be taken from register (0) as well as from register (1).

The registers (3),(4),(5),(6) can also hold LBA (Logic Block Acces) numbers, so a lot of calcuating can be left out!

A few important Commands:

#EC = Identify drive (512 bytes of manufacturers info can be read from the sectorbuffer)

#20 = Read sector

#30 = Write sector

The meaning of bits in the Status Register:

ERR bit 0 = set when an error occurred

0	1 = always 0
CORR	2 = set when the data needed correction
DRQ	3 = set when (more) data must be read or written
DSC	4 = set when the Card is ready
DWF	5 = set when a write fault occurred
RDY	6 = set when Card is ready to accept a command
BUSY	7 = set when the Card is busy

So under default conditions we should read decimal value 80 from this register.

A demonstration of the general way for approaching the Flash Disk is given in this real simple "Identify" Program in BASIC:

```
5  CLEAR 39999: LET T=40000
10  IF IN 49535 <>80 THEN STOP : Flash Disk not ready!!
20  OUT 49535, 236 : give identify command #EC
30  POKE T+1, IN 127: POKE T, IN 127 :read and poke MSB
    (first) and LSB
40  IF IN 49535 <>80 THEN LET T=T+2: GOTO 30
    :Loop until 512 bytes read
```

And now check what we've got, (a.o. the manufacturers name):

```
50 FOR f=40000 TO 40512
60 PRINT f ; " ";PEEK f , CHR$ PEEK f AND PEEK f >31
70 NEXT f
```

Please note that in line 40 I left out the discrimination of error-bits, I just check for the ready condition. In 'normal life' some error checking should be done.

I hope this is enough to wet your appetite in the subject. More spec's can be found on internet. For real use as a hard disk some kind of DOS is needed of course, and room to store such DOS. Blessed are those who have a spare ROM or RAM bank lying around, like me....

Roelof.Koning@12move.nl



Emulator news

vbSpec

Chris Cowley's 100 per cent Visual Basic Spectrum emulator hit version 1.70 in January, adding .TAP saving as well as loading, binary file writing and better mouse support. For those of you who have tried vbSpec out previously and become a bit irritated by the cracks and pops in its sound, this has now been fixed too (in version 1.61, in fact).

vbSpec is one of the few emulators to support the Timex TC2048 variant of the Spectrum, for which finding software online is quite difficult. There are, however, a couple of demos to download from the vbSpec site (written by Chris and Andrew Owen) and now, courtesy of **Alvin**, you can also get hold of a copy of **MSCRIP 1.0**, a popular word processing package for the TS2068, but which also seems to work with the TC2048. Go to <http://justme895.tripod.com/main.htm>

ZX-Emul

ZX-Emul, reported on briefly last issue, is now up to version 0.16. Author **Vladimir Yudin** has clearly been very busy as a great deal has been added in to this, including TR-DOS, support for Pentagon memory extension models (256k, 512k and 1024k), partial TZX support and multicolour effects. This appears primarily to be an emulator for machine code gurus with high priority given to debugging facilities. All

quite meaningless to me, of course, but it looks jolly impressive, so I'm sure it is.

<http://lion17home.narod.ru/>

Spectaculator

Jonathan Needle's superb emulator has had a massive update: version 4.0 is a serious contender in my mind for the most comprehensive windows Spectrum emulator about, challenged only by my other favourite, **SPIN**. This program has been developed at an astonishing pace over the last year.

The list of new features is very large indeed, and I'll start with perhaps the most inconsequential for most, but I fancy I played a role in bringing this option to Spectaculator through a post in WoS forums a while back and I think it's just fantastic. We're talking black and white TV emulation here, and boy does this mode bring back some memories! Stuck as I was back in the eighties and early nineties with a black and white portable telly (even my SAM Coupé had to make do with this), most of my Spectrum memories are in black, white and 13 shades of grey. I can't tell you how chuffed I was to run this mode. Sad, but there we have it.

On to more substantial matters. Spectaculator now supports the +2A, bringing it one step closer to the full range of Spectrums. Although there is no built-in support for SE BASIC (as with vbSpec and

SPIN), you can now use external ROM files (Spectaculator still uses embedded ROMs, rather than referencing external files, but you now have the option of overriding these and using externals instead) so you can easily drop the latest version straight in for 16K/48K mode (or a patched 128K ROM - see this issue's SE BASIC feature for more information). Or, for that matter, you could use other ROM files such as the Interface 2 ROM cartridges, **Geoff Wearmouth's** Sea Change ROM or the original **Investronica** 128K ROM.

Support for the ZX Printer has been added, in much the same fashion as for vbSpec and SPIN. There is also now support for the .RZX input recording format, so a game recorded using this on SPIN or **RealSpectrum** should now play back on Spectaculator. A previous patch for version 3.1 that enabled .SCR file access has been incorporated too, making these files accessible via the usual File>Open option. And there is now support for the AMX and Kempston mouse.

Spectaculator 4.0 will now accept external audio for tape loading, and perhaps my nicest surprise was that this actually works on my machine. My cheap and nasty built-in sound card had been sneered at so many times that I didn't even bother to try this feature until quite recently. I was, quite frankly, gobsmacked when a 128K program I wrote years ago and which I have been trying

Emulator news

unsuccessfully to preserve ever since I got into this emulation lark (it was the piano accompaniment to a piece of violin music I was supposed to be learning, programmed using the PLAY command; I tried to convince my parents at the time that, since the program would ultimately be used to support my violin practice, programming it should actually come out of violin practice time: I failed) loaded perfectly on the very first try. This is going to come in very handy indeed.

But perhaps the biggest addition, taking Spectaculaor into areas explored previously only by emulators such as RealSpectrum and **Z80**, is support for the ZX Interface 1 and microdrives. And, as with all things Spectaculator, the implementation is smooth and flawless, and backed up by the usual extremely comprehensive help system. Up to eight microdrives can be used together (as for the actual Interface 1), and creating a new cartridge is extremely easy, via the File>New option.

All in all, therefore, a very substantial update indeed. But it doesn't finish there. Jonathan has given ZXF an exclusive sneak preview of the soon to be released version 5 of Spectaculator. This adds in - you guessed it - Spectrum +3 support, finally completing the official Spectrum range. Rather than just supporting the built in +3

drive A, support has also been added for a drive B, which can be either an additional 3" Amstrad CF2 drive or a 3.5" DSDD floppy drive with a capacity of up to 720Kb.

Interface 1 support is developed further in Spectaculator 5, with the built-in RS232 port emulated, thereby allowing you to connect you real Spectrum to your PC and share files (not quite ZX Net, but a step in the right direction).

And there's been a big improvement to the quality of emulated loading tones,, now allowing Spectaculator to act as a virtual cassette recorder for a real Spectrum via your sound card's speaker out socket. I tried it, it works without a flaw (Taper suddenly looks rather old), and I'm telling you, loading a games simultaneously on both a real and an emulated Spectrum is seriously, seriously cool.

It's all obtainable from the usual address: **www.spectaculator.com** Spectaculator is freeware, but if you're able to help Jonathan out a little you can now make an online donation via **Paypal**.

SPIN

No new version of SPIN has been released yet, but ZXF can reveal a few details of the upcoming version 0.5, courtesy of information provided by **Paul Dunn** and **Mark Woodmas**.

SPIN has been given a bit of an overhaul for version 0.5. A lot of

the code has been rewritten, with a faster-running emulator emerging as a result. The options window has been redesigned, adding in a colour settings panel and some rather groovy new icons. There will be improvements made to the SPIN debugger also. Most significantly - as with Spectaculator - SPIN 0.5 will support the ZX Interface 1 and Microdrives.

Also due soon from the SPIN stable is a new program altogether - a Spectrum BASIC interpreter based on the SPIN core. I'm guessing it's essentially a new way to mess around with Spectrum BASIC without the hassle of having to remember all those keywords and the tedious mystery to the locations of the various symbols and punctuation marks. A very early version of the interpreter, called SPINLite, was released in 2002's dying breath (that'll be December 31st then) and since then the project has been renamed BASin, and we're all waiting to see what emerges. Keep watching; a recent post on **css** hints that we might not have to wait much longer...

Yes, it's really called BASin.



CSSCGC2002 result; CSSCGC2003 kicks off; CC50 is 20 years old

The **comp.sys.sinclair Crap Games Competition 2002** closed its doors on new entries at the end of February and the wait for Paul Equinox Collins (the host formerly known as Equinox Tetrachloride) to announce the winner is finally over.

Denouncing the 21 entries as

"mildly poor to just plain awful" and judging according to "standard criteria such as colour clash, comedy value, and technical incompetence," Eq has chosen Chris Young's **Millionaire**, Spectrum conversion of the popular <cough> ITV game show as the 2002 winner. Of this title, Eq writes, "Millionaire is riddled with so many amateurish

bugs that I suspect a radical compression algorithm has been used. Unmusical, unforgiving, and basically random in every way, it will have you "phoning a friend" in tears before you even reach the £400 mark".

Millionaire is a truly appalling piece of programming that

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2. Ski Jump	19. Tanks	37. Space Search
3. Basketball	20. Solar Ship	38. Inferno
4. Frogger	21. Ten Pins	39. Nim
5. Breakout	22. Cars	40. Voyager
6. Crusher	23. Stomper	41. Sketch Pad
7. Startrek	24. Pinball	42. Blitz
8. Martian Knockout	25. Cavern	43. Fishing Mission
9. Boggles	26. Laser	44. Mystical Diamonds
10. Alien Attack	27. Alien	45. Galaxy Defence
11. Lunar Landing	28. Cargo	46. Cypher
12. Maze Eater	29. The Race	47. Jetmobile
13. Microtrap	30. The Skull	48. Barrel Jump
14. Motorway	31. Orbit	49. Attacker
15. Labyrinth	32. Munch	50. Space Mission
16. Skittles	33. Bowls	
17. Race Track	34. Raiders	
	35. Field	

Names and games may vary for each type of computer.

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brilliantly uses the ploy that this could, conceivably be something playable. Oh, how it is not.

Runners up this year were **Earth Girls Make Tasty Snacks** by Juan Bolokov in second position ("It's cute, it's funny, and it captures perfectly the unwelcome feel of Cascade Cassette 50") and **Sir Clive's Dragon Mission** by Anders Carlsson ("This has all of the elusive pathos of a game that doesn't want to be crap but can't help it") coming third.

But fear not, crap addicts, for the 2003 competition is already underway! This year's host is the shady **Dave the Lurker** and the competition itself can be found at <http://8bitorbust.info/cgc/>. This will be the eighth celebration of the thoroughly dreadful standard of games programming established by the **Cascade Cassette 50** compilation (see left), which itself celebrates its 20th anniversary this year.

Entries have already started lining up, the first being **Crap Galge Game** by **Rasmus Palbo**. There's also **Nun Catcher** by **Nick Fleming**, a rather promising game until you realise you actually want to play it again. Every year the same problem...



Title: Millionaire

Author: Chris Young

Description: Spectrum Conversion of popular TV quiz show

Comments: Crap, but clever crap. Completely unnecessary colour clash sets the scene, alongside graphics that resemble a 'thousand times photocopied' office joke of the 'you don't have to be mad to work here, but it helps' variety. Opening tune could have been written through throwing a dice a few times. Expect your knowledge to offer no advantage whatsoever. You have to work to make something this bad.

Millionaire retains enough of a semblance of a commercial game, however, to make it just about believable. This title resembles those 'defeat snatched from the jaws of victory' titles (usually by US Gold). If WWTBAM really was sold in Spectrum format, it might well have looked a lot like this...



Spectrum through the the Micro Mart final

It's been a busy few months. In between putting together the current issue of ZXF and the new website there's also been the Micro Mart home computer 'World Cup' competition. Way back in November 2002, Retro Computer Mart columnist Shaun Bebbington announced the weekly magazine's desire to host a contest to find the best home computer of all time. Let the flame wars begin. As reported last issue, the Spectrum got through the first round (16 computers were selected for the competition), beating there the Oric Atmos by an uncomfortably small margin. Since then it has beaten the Commodore VIC 20 and the Amstrad CPC (which itself took out the Commodore 64 in a shock second round result) to get through to the final against the Commodore Amiga.

It's going to be a tough final, then. Not only is the Amiga a vastly superior computer to the Spectrum in terms of its technical abilities, it's also much loved amongst the Spectrum community, having served many Spectrum users as an upgrade back at the end of the eighties, and loyalties are therefore likely to be split.

In all, it's been a fun competition, but there have been a few angry outbursts on the newsgroups by a number of users who believe that the nature of the contest runs contrary to the spirit of mutual support required by the retro community. In some respects that's a fair point, I suppose, but rivalry was part of what the eight bit scene was all about in the eighties and, as long as we all know none of the competition is serious I can't quite see why it should provoke such hostility (ironic that these were genuinely hostile responses to a genuinely non-hostile competition). As Epictetus taught, *man is not disturbed by events, but by the views he takes of them*. Speaking personally I can only say that I've learnt a lot about the other formats over the past few months and my hope is that the contest has encouraged at least a few to take a second look at the retro scene.

Whatever the final result, it's great that the Spectrum came so far, and only a shame that we didn't get to meet the C64 in the semi-finals!



?



ZX81 games

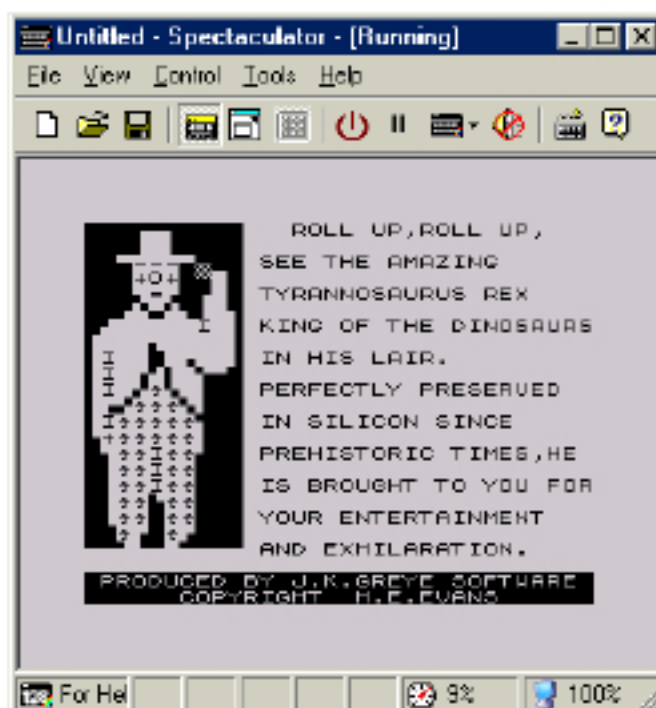
Russell Marks has clearly been very busy. He's ported no less than nine ZX81 games across to the 128K Spectrum, adding in a dithered version of each game's inlay and documentation.

The games are:

- 3D Defender
- 3D Monster Maze
- City Patrol
- Forty Niner
- Frogger
- Manic Miner
- Murgatroyds Revenge
- QS Defenda
- Rocket Man

And you can download them from:

<http://emul8.xlabs.sk/topgames/zx81conversions/>



New Sintech stuff

Sintech are probably the only distributor of new (as in newly designed) Spectrum hardware left. Alongside a very comprehensive range of 'classic' hardware (see advertisement, page 2) they have, over the past few years, marketed new devices such as the MB02 disk interface and the PROFACE PC-Keyboard Interface (which allows you to attach a standard PC keyboard to your Spectrum and experience the 'Decathlon without guilt' sensation).

Now they're adding to their range with three new products, the first - and most exciting - of which is no less than a **Plus D** clone. This, arguably one of the finest third party add-ons from **MGT** (a cut-down version of their ZX-Net compatible **Disciple** interface), gives you full access to a 3.5" DSDD floppy drive, formatting at 780K. The Sintech clone comes uncased, but the £79 price tag does include a floppy drive, PSU and connecting cable. I loved my old +D and I still haven't quite come to terms with the fact that it's dead (I still connect it up from time to time in the hope that it might start working again). If nothing else, I have a case to use if I buy Sintech's new offering, I

suppose.

The Plus D is extremely well documented on the Internet. You can read the manual and view the schematics at:

www.worldofspectrum.org/documentation.html

And **RealSpectrum** team **Ramsoft**, who are quite a fan of this interface (RealSpectrum can read +D formatted floppies straight from your PC's 3.5" drive) have produced their own very comprehensive documentation at:

www.ramsoft.bbk.org/tech.html

Also, if you fancy having a go at making your own Plus D clone, you can find some information at:

www.worldofspectrum.org/NotThePlusD/

Sintech's other new products are a **VGA-Box** (£30.38) to connect your Spectrum to a standard VGA-PC monitor and an **AV-Video Output Interface**, the price of which has yet to be determined.

www.sintech-shop.de



What are you going on about? 

Send your letters to zxf@cwoodcock.co.uk, with 'wibble' in the subject line.

Not many letters to print this issue - fair enough - so this time we look at some of your opinions expressed online as 2003 gets its feet firmly under the table, including your responses to the IDSA attack on WoS, the new software house Cronosoft and an idea of mine for a Spectrum re-release...

I've discovered the existence of ZXF about a week ago. I've downloaded all three available numbers and my opinion is that this mag makes me feel as if I'm still in the '80, with magazines like Crash, Sinclair User and the others on the shelves. It's totally different from the nostalgic sites I found on the web when firstly going around the emulator scene.

Finding News pages on new software and hardware is something absolutely unexpected, and the competitions, too. I think I can provide something for the next CSSCGC, having some very crappy basic listings on my tapes (if only I can read them into an emulator, after 20 dusty years).

I entered the speccy emulator scene about 3 years ago, and since then I use X128 as my preferred emu. I like its spectrum-like interface: you feel like you're not running on a pc, since you can work inside the spectrum shell without having to interact with dos or windows.

After reading ZXF, now I continue to prefer X128 on my old pentium 133 (lighter than RealSpectrum), but I now use Spin on Windows 200pro laptop (but I cannot run the .trd clone demos on it!).

D'you know if there is an italian speccy scene (I live in Rome)?

Any news about Matthew Smith?

I can't wait for the issue 4.

Nando Turco, Rome.

Regarding the CSSCGC, as you may have read in 'new,' the 2003 competition opened on 1 April and this year is being hosted by Dave the Lurker. Having tried just

about every method I could find of getting old programs of mine off tape and onto a PC, and failing every time (Taper, MakeTZX, you name it) I was stunned and delighted to find that Spectaculator's 'Load from Audio Source' option (Tools menu) works like an absolute dream. It worked so well I actually fell off my chair. All it took was a mono 3.5mm jack lead from my tape recorder to my PC's Line In. So converting your games might be easier than you think.

Matthew Smith, according to the recent EDGE Retro special, is now on the dole and living in Dewsbury.

As for an Italian scene - can anybody help Nando out on this?

Eggstatic responses

Here's what some of the first Egghead 3 purchasers thought (taken for WoS Forums).

I received mine today as well and I'm very impressed with the quality of the cover, and the game.

I did have some trouble getting it to load, but after a while fiddling around with volume levels (forgot just how much fun That was!), I managed it - although only 1 side of the cassette will work.

It's a shame the instructions had to go on a seperate sheet and not on the cover but that would require double sided printing.

Anyway a great first release which I really hope does well.

martinball

Congratulations to Jonathan on a great game, and Simon on a

splendid production service (not only did you get all of this off the ground very quickly, but you shipped out the software, complete with excellent inlay, in mere days after receiving payment). Good effort, fellas!

Derek Glen

hah! thats so cool! nice job on the inlay. i definitely think all titles should have 2 or 3 screenshots and the cassette scan on the page like it is now. the tape inlay looks real cool. the style reminds me of older spectrum games and really gave me some goose bumps! like the sinclair releases.

the sinclair zx spectrum label at the top makes it look real cool too, and your cronos label at the bottom looks great too. well done!

Amigo

I got my copy today. I was impressed with the speed of turnaround, very fast. Sometimes, I buy things on eBay, and wait for ever and a day to get my stuff.

Well packed, arrived quickly.

I use a +2 mostly, which I got 2nd hand, it loaded 1st time.

I loved the loading screen, and the cassette inlay was good enough, as already said the logos look good, and I agree perhaps the instruction insertion could be better. Dreadful puns, just the way it should be! This is very much like the early '82/'83 releases in this respect though!

I shall have a 'crack' at playing this properly on Saturday, and let you know 'eggsactly' how I get on.

thx1138

CSS thread: New Spectrum?

I have been reading information regarding a ongoing project which several people are working on regarding a new version of the Amstrad CPC using the new eZ80 50MHz CPU!

I think that if we Spectrum users were to design a similar system it could spark some much needed interest back into the Spectrum hardware scene!

About the only upgraded Speccy I can think of is the +3e project and compatible machines like the Sprinter but a powerful variant would be a massive improvement to the situation.

C64 and Amstrad users are doing so much more than we are and it is really irritating to hear C64 zealots harping on about fast processors, internet access and GUI OSs when we're still talking about Jet Set Willy and Linda Barker!

It is about time we all worked together to ensure the Speccy doesn't become an 'ancient artefact' in the British Museum!

Weetomuncher

Speaking purely for myself here, I just can't get fired up all that much by the prospect of a new commercial 'super spectrum'. The more new features any such machine had would simply make it less a spectrum. I *do* like very much the idea of enhancements that could be made to existing spectrums, but this would only be of interest to us die-hard hardware fans.

If a new machine were brought out, it still would be nothing to match the current platforms for gameplaying - I'm thinking consoles here - so it would do little to attract attention from non-speccy fans. I doubt that anybody would be willing to back such a venture, therefore.

Why would we want such a system? As a viable alternative to a PC? Use the Sprinter then. As a better games machine? Buy a PS2

or whatever takes your fancy. To me, the 'spirit' of the Spectrum is all about working within a set of restrictions - memory, sound, colour clash, etc - and pushing back these boundaries to get a result. A hard disk interface - great. An add-on that gives more video modes - superb. I'm up for all of these, because they take what is and improve on it. *We* appreciate these things because we know just how clever they are, but someone coming to all this fresh would wonder what all the fuss is about.

I've thought about this a lot recently, because actually I do think there might be mileage in the current climate for a new Spectrum, but my idea is not for a super spectrum, rather a re-release of the rubber-keys model.

How could this be viable commercially? Well we all know that retro is 'back in,' so to speak. Retro radios sell for an extortionate amount of money, for example, and then there's all this talk of retro games on mobile phones. The idea centres on a very cheap computer designed along the lines of an original Spectrum 48k that would retail for - if possible - under £25. "Own a classic British computer," etc, etc.

But the key selling point would be the software, and for this I'm thinking games sold on those little credit card sized CDs, with attractive print work to make them collectible. They would be, to all extents and purposes, the new Pokemon cards to be collected - attractive in their own right, with the added function that they can load a game into the new spectrum (or into an original spectrum, of course) via a CD walkman (or whatever) connected to the ear socket. Games could be sold, say, 3 or 4 to a packet at, perhaps, £2 (or whatever works).

Even better still would be a handheld spectrum with an in-built LCD screen, but the cost of this

would be likely to push up the console's price considerably (and having been a teacher and still now working in education, I know the hazards of taking valuable electronic equipment into school also!)

Why would we want such a system? If it worked, Spectrums would be trendy again and awareness would be raised (if it worked *really* well we might even see new magazines springing up for a while). Spectrum games would be popular again - everyone will have the chance once more to reflect on what a really good game does actually consist of. A whole new generation of children would have access to a computer - and a very cheap computer - which they can do something with regardless of whether or not they have a piece of software for it (ie, programming, which could even become fashionable again by itself). There would be no need to remove distribution permission on software at WoS since games would be bought for their collector value, leaving 'new recruits' to discover WoS and all its joys. Old cassette software could be loaded into new machines. And so on. In short, by using a trick of fashion, we could introduce a whole new generation of people to the Spectrum. The resources we have available to us at the moment are just superb - wouldn't it be better still if more people were using them?

As an educationalist, I'm very keen to give something to children that is positive, that embraces learning as a goal in its own right and which encourages problem-solving skills. This therefore feels to me like an idea that sits well with both this hat on and my Spectrum fan hat on too.

What do others think? Should I write to Amstrad?



IDSA Outcry What you're saying about the email to WoS.

WOS FORUMS

Yeah, it does look rather ominous on first reading. However, it also looks like they've not done their research, and that Martijn has parried them rather well for now. And, as anyone with half a brain can hopefully see, this is not some dodgy WAREZ site, but one for enthusiasts, who want to share their memories, ideas and passion with each other. Surely even some Harvard-educated, sharp-suited bloodsucker can see that...?

</ROSE-COLOURED-GLASSES>

Ed

The IDSA seem to have contacted lots of sites that I visit about removing certain game downloads, and from these xperiences, do not seem to answer correspondence, so it will be interesting to see what happens next.

Personally I think they are being ridiculous, running after 20yr old games. Ok so publishers want to develop the titles on new formats like mobile phones, but how is the Speccy download gonna seriously affect that??

LeeT

Other sites have received similar letters so I think it is likely that it is the IDSA attempting a general crackdown on copyright infringement than a specific attack on WoS. We shall just have to see what their next response is.

Walrus

I agree that they do not seem to have done their homework but I fear that in this case they are not going to back down so easily. The companies they represent do have the rights to 'Donkey Kong' 'Pacman' and 'Mario' and it wont matter to them if the games were released over 20 years ago, the fact is the charaters were only

licensed for that particular game (and the license must have expired by now) and that they still own the rights to those characters.

Adventurer

COMP. SYS. SINCLAIR

What's particularly funny about this is that the games in question (since Frogger, for example, never got a licenced Speccy conversion as far as I know) are probably all in themselves illegal copyright-infringing clones of arcade titles. It's a bit like stealing a car and then trying to prosecute someone else for stealing it from you.

Rev. Stuart Campbell

From the IDSA's point of view it's more like someone stole their car, someone else stole it, and some other person is trying to flog it on on their behalf.

Frodo Morris

What does surprise me is that, despite the IDSA's probable size and importance, it seems to be run by gibbons. Can't they perform even the most cursory checks before they start threatening to sue? Can't people that they threaten unnecessarily sue them for harrasment? Can't they leave us alone and get proper jobs?

Ant

SLASHDOT. ORG

[WoS] are surprisingly pro-rights-holder. Unlike most such sites, they don't simply say 'we can distribute this because we want to', but they acknowledge that a company who has spent many hours (albeit 10 or 20 years ago) and money developing a game has the right to distribute it (or not!) as they feel fit.

Reading that link you realize that essentially they are PRO-IDSA.....

Anonymous Coward

Let me get this straight: You

attempted to contact copyright holders, and when you didn't receive a response from them, you assumed it was okay to continue to offer their works for download? In other words:

Dear Copyright Holder:

We are offering your works for download on the internet for free. If you would like to Opt-Out of this arrangement, please let us know by clicking the link below. Otherwise we will continue to offer this service, even though we don't actually have your permission.

Cheers, The WoS team.

Mournblade

I think that's a rather harsh way of putting things. The contact e-mails which are sent are rather more detailed than that, and attempt to explain why we're doing this as well.

As I said above, the decision to distribute 'non-denied' games is a pragmatic one; we've never tried to claim that what we're doing is 100% whiter than white legal, but we are making an effort on this front. From a personal point of view, that matters a lot to me.

pak21

For the avoidance of doubt, then, will you now agree that what you are doing is not legal?

Oh well, but your conscience is clear because you made "an effort".

tap tap tap Hello? Deep down (well, not so deep really, I can almost hear you sniggering) you know full well what you are up to. You are kidding no-one, except perhaps for yourself...

Ataru



Spectrum games, you see, are just like buses... And so on. **Load** is back, and this time with some of the stuff that really should be here: new *Spectrum* games. This issue I'm helped out by Spectrum graphics and die-hard Dizzy fan Tommy Pereira, aka AMIGO, the very artiste responsible for the *Egghead 3* loading screen. With Tommy's permission His text has been taken from his much larger Spectrum games article at peeknpoke.emuunlim.com/spectrum2003/pnpspectrumnewgames2003.html where you'll also find news about new Spectrum titles currently being developed. Just when you thought things couldn't get any better...



Egghead 3

Format: ZX Spectrum

Author: Jonathan Cauldwell

Price: Free (original version)/£1.99 (special edition)

Goto: <http://members.fortunecity.com/jonathan6/egghead/index.html> / www.cronosoft.co.uk



"Egghead in Space" is the third installment of the Egghead Series which you probably remember from CRASH cover tapes. It was finished recently and "Egghead in Space" is the third installment of the Egghead Series which you probably remember from CRASH cover tapes. It was finished recently and was programmed by Jonathan Cauldwell the original author of the first two Egghead games. It is being given away for free at his site (see first link above), but - more importantly - a special edition with new screens and a revamped display is being sold for £1.99 from **Cronosoft**, the new retro software house, making it one of the first new commercial Spectrum releases for years.

Egghead 3: Egghead in Space is a very fun puzzle game (In the style of Dizzy, Giddy 1 & 2 on Amiga and Giddy 3 for PC). The graphics are very cute and well done and color clash is also to a good minimum. The difficulty of the game is not barbaric and irritatingly impossible but not easy either. The difficulty is at a well balanced level getting increasingly harder as you go along but seems to be quite beatable with perseverance, the way games ought to be. Once you've got a handle on the controls and figured out the way the game works and familiarize yourself with your environment and Egghead's movements, you'll be on your way to an even more enjoyable experience. The sound effects suit the game very well, and although there is no option to redefine keys (which I usually like) players should get used to the prede-

fined keys quickly, which are only three (Left , Right & Jump). A nice feature in the game, as it seemed to me when I played it is that after you have lost all your lives and must start from the beginning again, you start with the last object you had before you lost your last life, which many players might consider a nice plus as you won't have to go back into the same rooms and complete them over again, but rather you can avoid many of those rooms and head back to where you left off. I've not beaten the game yet and I don't know what the ending is like, but at the moment the only thing i feel is missing from the game is music. If not some great 128k music it would be nice to have at least some nicely done 48k music even if only on the title screen. Nevertheless this is a very well programmed and designed game that will keep you busy for quite a while. I'm sure it will

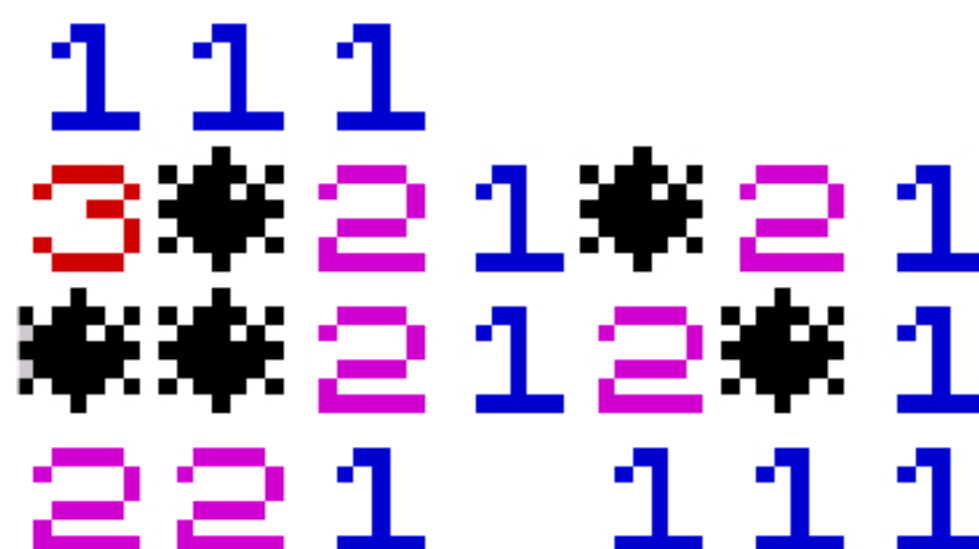
ZX Mines 2.0

Format: ZX Spectrum

Publisher: Compiler Software

Price: Free

Goto: <http://www.speccy.org/compiler/>



satisfy players who are fans of this sort of puzzle/platform genre of gaming, and myself being a Dizzy fan to end all Dizzy fans, (and that's the most modest I'll get :)

I immensely enjoyed this game. Kudos to Jonathan for another great game and continuing the Egghead series. **AMIGO**



ZX Mines 2.0 is the follow-up to ZX Mines, also by Compiler Software and - in all honesty - not a lot different to its successor, at least in looks. In fact the difference is that the original is written purely in BASIC as an entry for Radastan's 2003 BASIC Game Programming Competition, whereas version 2 is written in C and ASM to give it a bit more punch - or, presumably, bang.

ZX Mines is a Spectrum version of Minesweeper, and there's not much more that can be said for it than that. It's extremely competent in achieving this aim, mind you. There are three different map sizes and support is included for joystick control. About the only thing it lacks are the flags you place when you think a square might contain an

incendiary just waiting to send your limbs on separate missions and the little yellow emoticon that turns from happy face to sad face when it does.

One rather nice touch is that you can download the full source code of ZX Mines 2.0 to play with, and the full 'package' also includes both a cassette label and an inlay card design.

If you like Minesweeper, you'll like ZX Mines. It's that simple. A job well-done indeed. **CW**



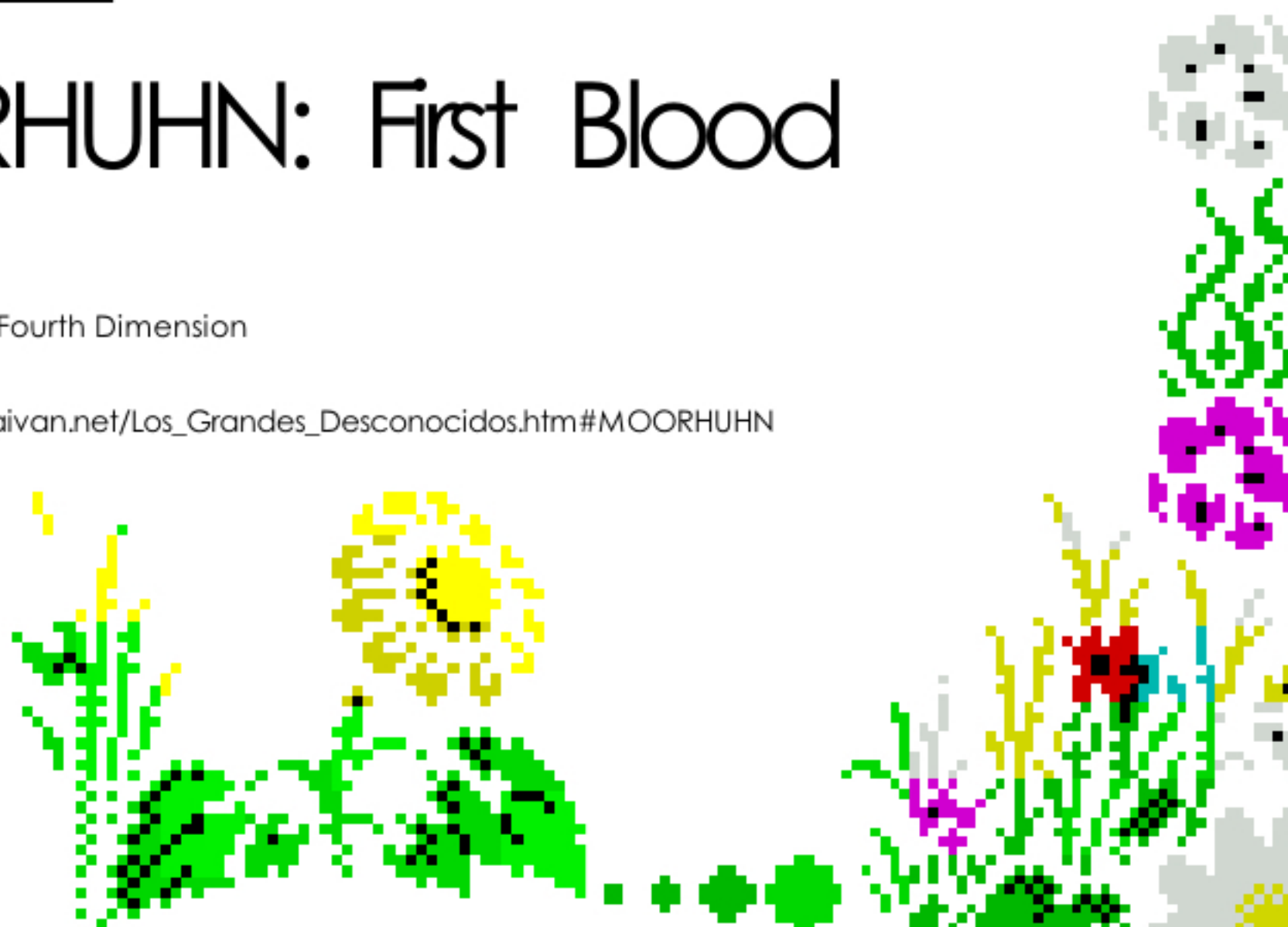
MOORHUHN: First Blood

Format: ZX Spectrum

Author: Triebkraft and Fourth Dimension

Price: Free

Goto: http://www.jaivan.net/Los_Grandes_Desconocidos.htm#MOORHUHN



This game was made by Triebkraft and Fourth Dimension based on the original game by Phenomedia. What that original game is or what machine is on I have no clue :-O

There are three different levels of play to this basic shooter game. In one you simply have to shoot a certain number of birds under a certain time and when you're done the game is over making it seem more like a practise level. The next level you have to shoot as many birds as possible under a time limit and your ammo is unlimited although you have to reload. This can sometimes make things difficult, as you can't reload until you are entirely out of bullets and the reload button is sometimes not very responsive. You may need to hit the reload key twice for it to work. In the next type of game you need to to the usual, but bullets seem to

be unlimited and the birds can pop up and down much faster. This seems to be the most difficult part of the game. There are also five different music tracks you can listen to and you change them by pressing any key from one to five. The only objective seems to shoot as many birds as you can and get the highest score you can. Once the game is over, it's actually over and you're taken back to the hi-score and menu screen. This is a basic shooter and there isn't really all that much to it. It is very fun though and the kind of game you want to play to kill some time, and it's not particularly easy in some parts. At worst it's something you might have seen before but can still enjoy playing, unless I happened to miss something here. On the other hand the music tracks, different gamestages, colorful graphics

and messages that pop on the screen now and then help keep it interesting for a while. It's worth the download & great to pass the time with. **AMIGO**



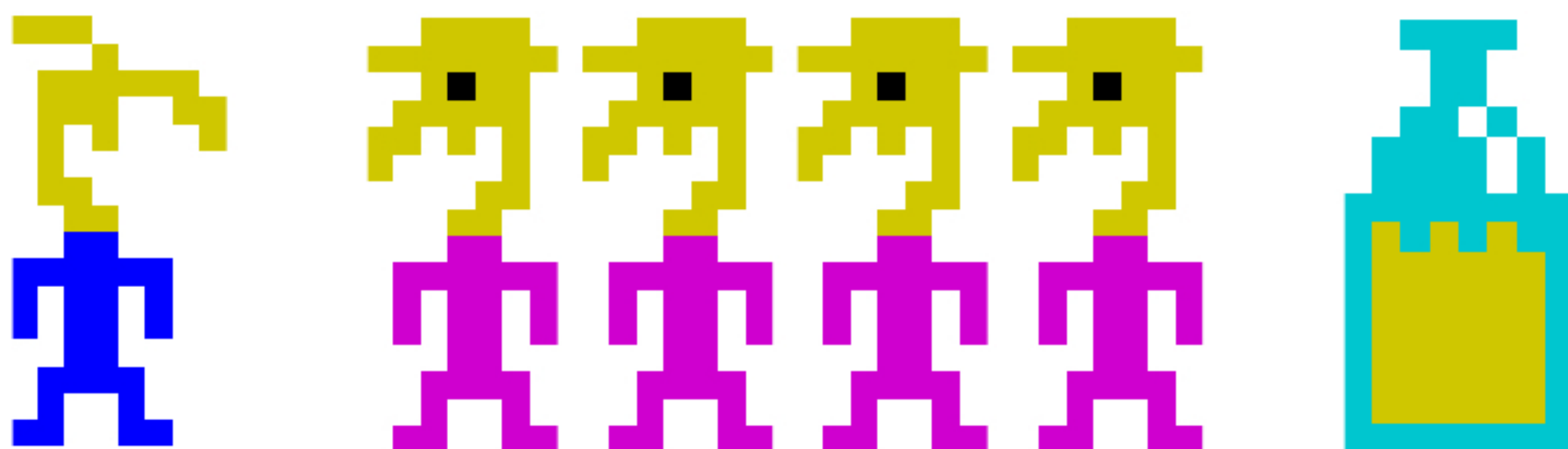
Flash Beer

Format: ZX Spectrum

Publisher: Weird Science Software

Price: £2.99 for all three games; the first can be downloaded for Free

Goto: <http://www.c-system.hu/edy/wss/flb/index.html>



What is it with wives and beer? When they find our secret stash of golden happiness, are they content merely to empty the bottles down the drain? Do they simply be rid of those precious bottles of momentary happiness and be done with it at that? Are they able to draw a line between run-of-the-mill vindictiveness and downright murderous sadism?

Not the wife of our hapless, hopeless hero in **Flash Beer**, it appears, who seems intent on bringing about the swift and messy demise of her downtrodden spouse through an arrangement of rocks and purple guards between him and his next jar of joy. Does Mr Flash Beer man sigh stoically and choose a pint - *and life* - at his local, rather than embark on this journey of certain suicide? Oh

no. Does he demand of his wife just where the money came from to pay all those guards' salaries? Not a bit of it. Off he goes like a dog on a leash, and if - by some miracle - he makes it through the first of the 44 rooms in his oversized house, off he'll trot into the next one too.

Flash Beer is *hard*, people. Just getting through the first screen is an accomplishment. And, believe it or not this is only one third of the problem, parts two and three of the trilogy adding an extra 57

rooms to stagger through in a blind, drunken stupor.

But - just like the pitiful husband - you simply can't stop trying. In Flash Beer (a remake of the C64 Boulderdash clone *Flasch Bier*), Hungarian coders Weird Science Software have come up with a highly addictive new addition to the Spectrum fan's library. The first part is free and WSS need 50 orders before a batch of cassettes can be made, but if you order now and it takes a year you'll have plenty to do until then.





Dead or Alive

Format: ZX Spectrum

Publisher: Cronosoft

Author: Jonathan Cauldwell

Price: £2.99

Goto: www.cronosoft.co.uk

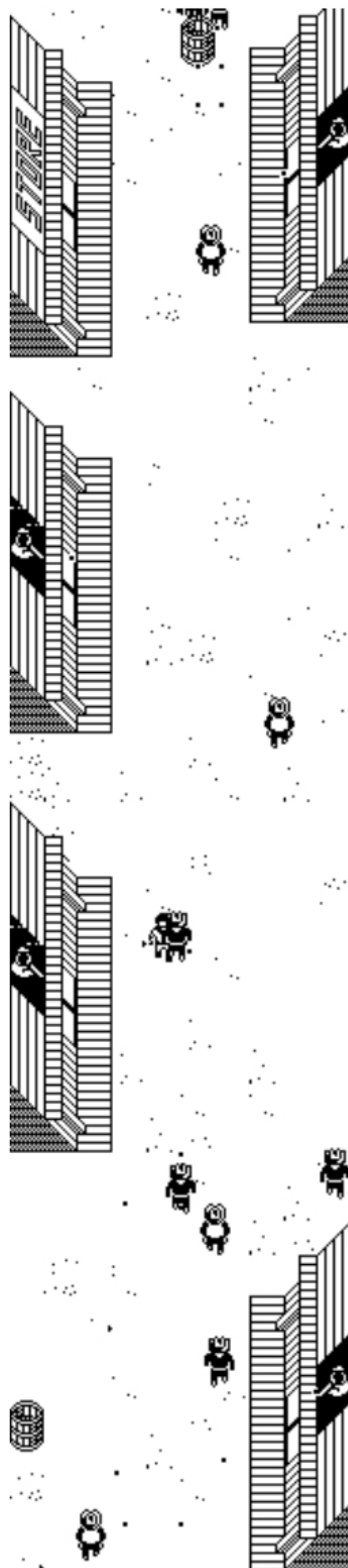
Dead or Alive is the second Cronosoft release by Jonathan Cauldwell and quite a different game than **Egghead in Space**. A vertical scrolling shoot 'em up, this title sees you as the new sheriff, out to clean up the streets of your new patch in the wild west.

And wild is the appropriate world, for it would appear that your appointment has not gone down well with the residents, who turn out in their droves to shoot you down like the dog the clearly believe you to be. A veritable army of rough shaven, tobacco spitting, gun slinging bandits come at you; it probably crosses our hero's mind before he's even reached his first barrel (which, if shot a few times, might surrender extra fire power or speed to aid you on your way) that a job in a library somewhere doesn't seem so unattractive after all. He is not welcome. Happily, however, the laws of physics have decided to look kindly on you and make the bad guys' bullets travel more slowly than your own. It would be a bigger advantage if there weren't so many of them. It's

obviously a popular town, but I can't for the life of me think why.

A word of advice: if you load this game into an emulator, play it in full screen mode and you'll get the hang of the controls that bit quicker. In fact, after a few frustrating cases of death-by-wandering-into-a-bullet-you'd-already-dodged-then-quite-forgotten-about, you'll find yourself laughing as you take your stroll up the street, the body count piling up as you go, weaving casually around those lethargic bullets and picking off baddies the moment they show their faces. That is, until you meet the super bad guy at the end of the level, who has had a word in the ear of physics and managed to wangle himself a gun with the same firing speed as yours. This is where it gets quite hairy.

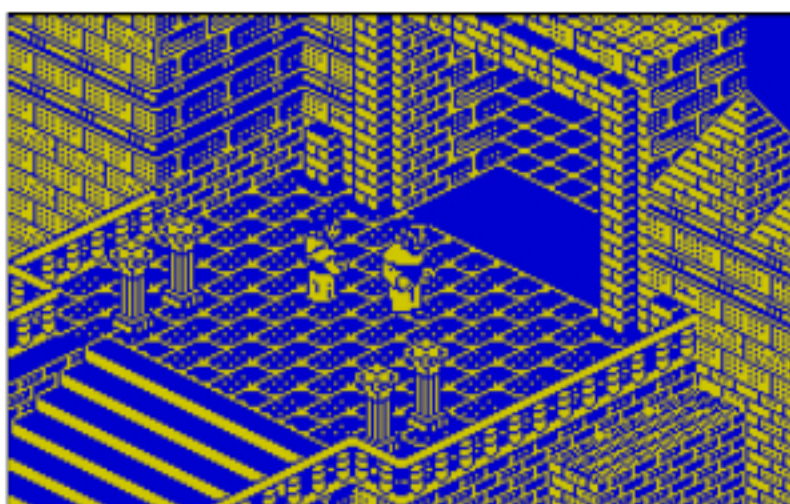
Dead or Alive, as you'll no doubt surmise for yourself, is **Commando** done cowboy style. So if you liked that coin-op conversion you will probably lap this one up like a thirsty horse tied next to a water trough. Or something.



PREVIEWS

Games on their way.

Head Over Heels Good news for HOH fans: Ocean's 1987 isometric classic is being converted for the PC by **Jorge Rodríguez** and the graphics are simply stunning. A beta download of the game is already available (version 0.66) from Jorge's site at <http://usuarios.lycos.es/hoh2/uk/> as well as the original versions of the games in all the formats on which it was originally released, from the Spectrum to the Amiga.



La Abadía del Crimen is regarded by many Spanish Spectrum enthusiasts as the greatest Spectrum game of all time. Since many of us UK users have never heard of it, this little classic has gone largely unnoticed over here. Until now. Arising mostly out of a WoS Forums discussion thread, an English language remake, **The Abbey of Crime**, is now in progress.

You can see just by looking at the screen shots how this game gained its reputation. But Abbey has an atmosphere and artistry to it that goes beyond skilled graphics alone. On loading you are confronted with a number of pages of text which have all now been lovingly translated:

As I now approach the end of this life of sin, I await my abandonment into the bottomless pit of silence and depravity. With my heavy, ailing flesh confined here in this cell in the holy monastery of Melk, I prepare to inscribe on this parchment my testimony of the astounding and abominable events that I witnessed in my youth...

[http://eddie-duffy.pwp.blueyonder.co.uk/speccy/AbbeyOfCrime\(WorkInProgress\).tfx](http://eddie-duffy.pwp.blueyonder.co.uk/speccy/AbbeyOfCrime(WorkInProgress).tfx)



SE BASIC

Following last issue's interview with Andrew Owen about the **ZX Spectrum SE**, we turn now to his software masterpiece. Andrew is now off on his travels again and will not be developing **SE BASIC** any further for the immediate future. He achieved a remarkable amount whilst he was back however, worthy of at least a little preamble before the interview itself...

Some of this repeats information given in the news section last issue (03), however it's worth going over again here for the sake of completeness. The latest versions of SE BASIC available from the official website at www.worldofspectrum.org/sinclairbasic/ are version 0.83c (16K ROM Developer Release) and version 0.80a (16K ROM Public Beta), both for 16K and 48K machines. SE BASIC is a 16K ROM and can be used straightaway as an alternative to the standard 48K Spectrum ROM in emulators such as **SPIN** or **Spectaculator** which allow you to substitute in alternative ROM files (you could also blow the ROM onto a 16K EPROM if you have the wherewithal and drop this into a real Spectrum in place of its existing ROM). To access either of these versions in anything other than 48k mode, however, you'll need to do a bit of work.

The first 128k Spectrum and the +2 used two 16K ROMs on a single 32K ROM chip. One of these - ROM 1 - is the original 48K Spectrum ROM (just so we're clear here, I mean the ROM of

the 48K Spectrum, not a Spectrum ROM that is 48K - all spectrum ROMs are 16K). The other - ROM 0 - adds in all the extra functionality of 128 mode such as the editor and menu system. As Andrew points out in the interview, ROM 0 is not a separate BASIC, but an extension of ROM 1.

The +3 and +2A actually use *four* ROMs on two 32K ROM chips. These are:

- ROM 0: 128k editor, menu system and self-test program
- ROM 1: 128k syntax checker
- ROM 2: +3DOS
- ROM 3: 48 BASIC

So in this case ROM 0 on the +3/+2A is the same as ROM 0 on the 128/+2 and ROM 3 on the +3/+2A is the same as ROM 1 on the 128/+2. Clear?

So to use the latest version of SE BASIC with the complete range of Spectrums it needs to be substituted in for one of these ROMs - the obvious choice is ROM 1 for the 128/+2 or ROM 3 for the +3/+2A, however Andrew discusses other combinations in the interview. Since most

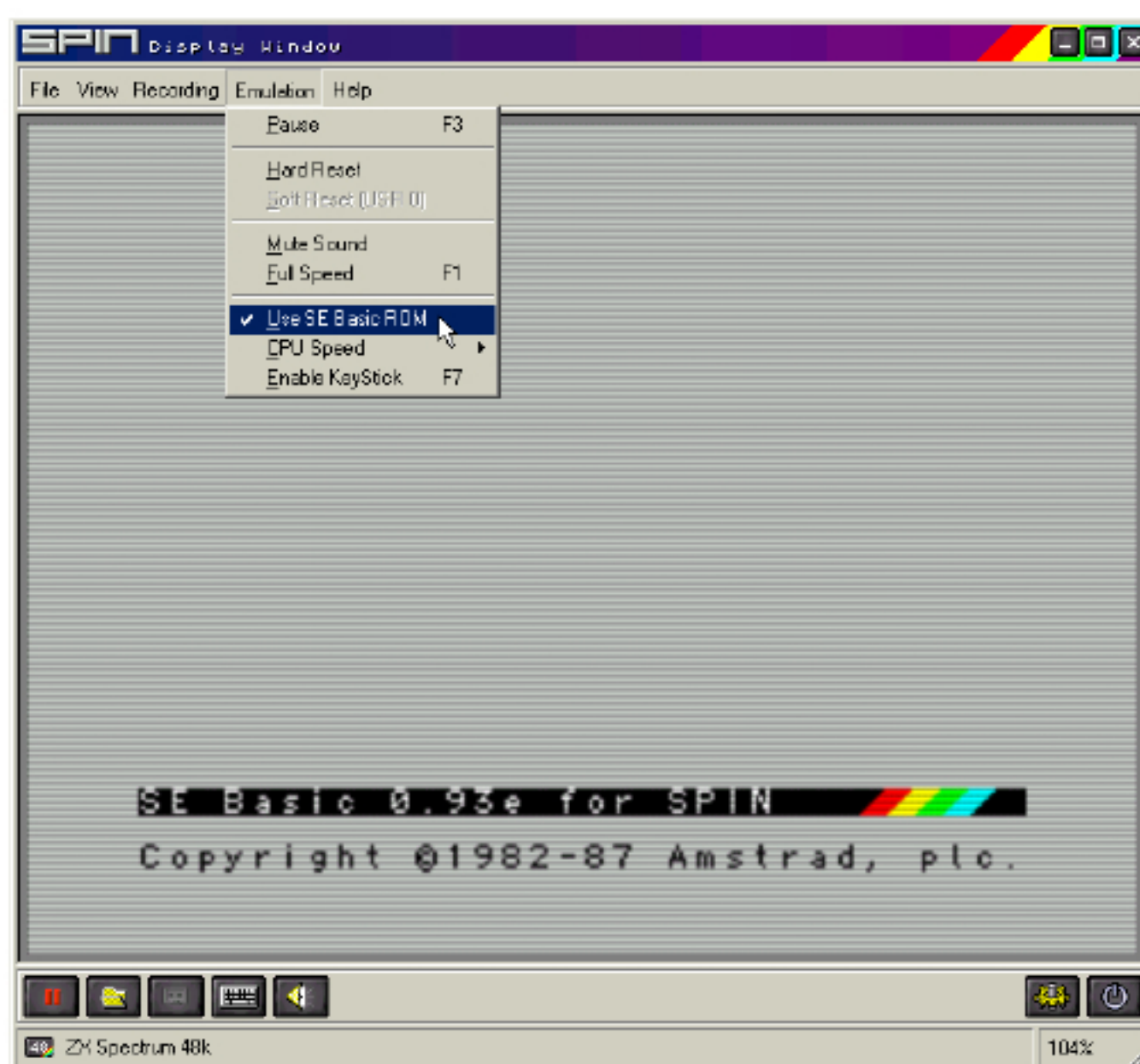
emulators just use a single ROM file containing all ROMs together (ie, a 32K ROM file for the 128/+2; a 64K ROM file for the +3/+2A) you therefore need to obtain all the individual ROM files separately (which you can do from *The Spectrum ROMs collection* at www.srcf.ucam.org/~pak21/spectrum/roms.html) and then concatenate them with SE BASIC as appropriate.

If all this sounds simply too horrendous to bear then fear not. A great deal of Andrew's work over the last few months has been in making SE BASIC more accessible. First of all there are a number of **IPS Patches** which can be downloaded and applied to these 32K and 64K ROM files (ie, the ones supplied with and used by your emulator) to turn them into SE BASIC ROM files. From the 'Patches' page at the SE BASIC website you can get hold of patches which will install SE BASIC (version 0.8) as ROM 1 on a 128/+2 or as ROM 3 on a +3/+2A. There are also smaller patches to download from this page for the editor ROMs (ROM 0 for the 128/+2; ROMs 0 - editor - and 1 - syntax

checker - on the +3/+2A). You will need a program such as **SmartIPS** to apply the patch; programmes for most platforms are linked to from the SE BASIC website.

Secondly, if this still sounds like far too much, special versions of SE BASIC have been released for the emulators **SPIN** and **vbSpec**, both of which now have a 'Use SE BASIC' option which, once selected, will patch in SE BASIC whichever model of Spectrum you emulate. Now this really is very simple.

Despite all this talk of 128K machines, however, SE BASIC is just great fun to play around with on a good old 48K Spectrum (quite apart from anything else it's simply so much easier entering a program letter by letter and not having to hunt around the keyboard for all the commands and functions). I mentioned earlier that it can be blown onto an EPROM and substituted in for the original ROM on a real Spectrum: simple though this procedure sounds in principle, if - like me - you've the soldering skills of a drunk elephant, this is no easy task (first



SE BASIC running in SPIN 0.4: point, click and you're away

you would need to 'de-solder' the original ROM in order to remove it, next you would have to solder in the EPROM socket; of course once this has been done, further replacements would be simple) - and, of course, you need access to an EPROM blower. Andrew has, therefore,

released version 0.80a as a .TAP file also, which loads SE BASIC into the top 16K of RAM on your Spectrum, instantly turning it into an SE BASIC machine (by the way, in case you don't know how to do this, I use the DOS program **Taper** for loading tape files into my Spectrum; I connect



my PC's speaker socket to the Spectrum ear socket using a standard 3.5mm mono cable - actually an Interface 1 ZX Net cable; a normal Spectrum ear/mic cable would probably do fine, but will be a little short). This version will also work with the original 128/+2; there are also versions for the +2A and the +3, both of which run SE BASIC in RAM mapped into the area normally used by the ROM.

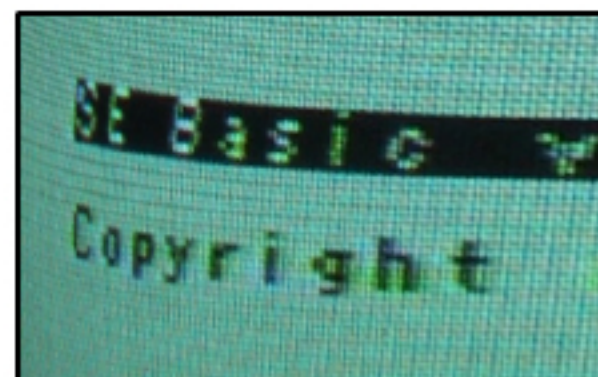
SE BASIC is intended for use in a variety of machines beyond just the Spectrum. To demonstrate this, a version for the SAM Coupé is also available in SAM disk image format. this can be loaded into the excellent SIM Coupé emulator or converted into a real disk for a real SAM.

All in all, a considerable development from a few months ago, when SE BASIC could only be obtained as a 16K ROM IPS patch. And there's more. At World of Spectrum forums - www.worldofspectrum.org/forums - a new discussion board has been opened for all SE BASIC related discussions. Although Andrew himself will be unable to contribute over the coming

months there's already a lot of information there and, as SE BASIC expertise develops within the Spectrum community, others should be able to help you out with your queries.

What remains to be done? Yet to emerge is the SE BASIC manual, which will eventually be released in PDF format. well, we'll just have to wait for that. Andrew has, however, posted information on the key features of version 0.83c on his website and a copy of that text follows the interview.

For now, though, I've gone on enough.



SE BASIC - as I understand it - is a replacement ROM for Z80 based machines.

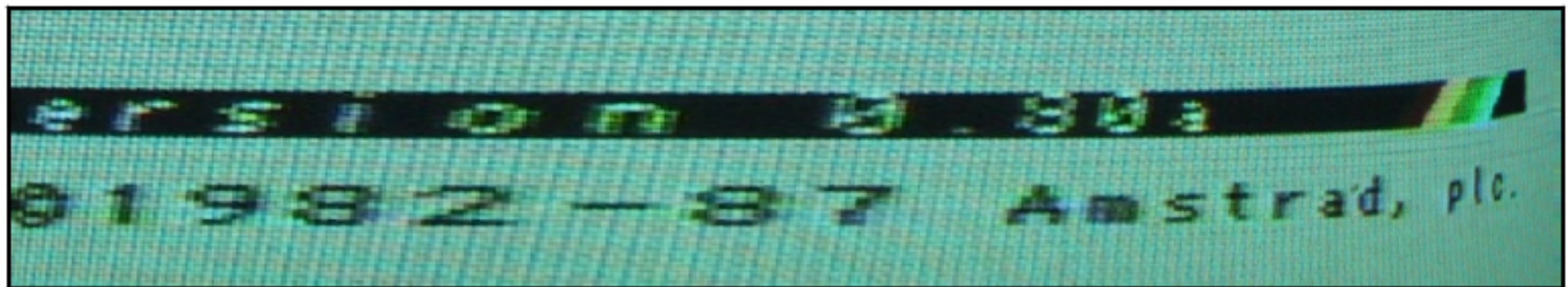
Yes. The ultimate aim is that it will run on a range of Z80 based hardware.

Let's look at the ZX Spectrum first as the most obvious example of one of these machines. What advantages does SE BASIC offer over standard Sinclair BASIC? Let's assume for the moment we're using the ROM with a Spectrum emulator.

Where to begin? OK...

First this is the most compatible version of BASIC for running commercial Spectrum software. It will run almost every 16K, 48K, and 128K program out of the box. For example, unless you own a +3 (or a +3 emulator, but remember not every system has these yet), this is the only version of BASIC that will let you hear the AY sound on Lemmings. Also, it doesn't suffer from the compatibility problems of 128 Basic when running legacy 48K software on a 128.

Second, if you're writing BASIC programs you'll find the editor much easier to use than either the original Spectrum editor or the 128 Basic editor. For a start there are no more tokens to remember. Every command is



typed in full. But there are macros for some of the really common lines like `LOAD ""[ENTER]`. You can cursor up and down in an edit line. If you type a syntax error the cursor will jump to the error (with better accuracy than 128 Basic). Although EXTEND mode is removed, you can still add control codes to a line in the normal way. The new character set is much more restful on the eyes (it's even readable at 1x magnification on a 1024x768 display), and it has the advantage of being able to be used in a 42 column mode with one of the utilities supplied. Also the range of acceptable line numbers has been increased to 1-16383. And there will be an SE Basic compiler supplied with the package.

Third, all the bugs are fixed. And I mean **all** the bugs. At present the only other ROM which addresses these bugs is Geoff Wearmouth's Sea Change ROM, and while it's a great bit of work, it's also 100% incompatible with 90% of commercial Spectrum software.

Fourth, if you have a Timex (or emulator) you'll find improved support for the extended video modes offered by these machines.

Fifth, the E in SE Basic stands for Extended and the functionality of the BASIC really is greatly enhanced over

the original. There are too many features to list, but it is useful when addressing criticism from the C64 camp that no-body is updating the Spectrum BASIC these days. :)

Now a bit of hardware. SE BASIC works fine with a Spectrum emulator in 48k mode (eg, SPIN).

Actually you can use it in 128 mode and +3 mode as well. In both cases a few minor patches are required to the editor, or you can just set SE Basic to be ROM 0 (although it doesn't support +3 DOS (yet)).

Would it be correct for me to assume that I could similarly blow the ROM onto an EPROM and exchange it for the ROM chip in a standard Spectrum 48k?

Yes. In fact unlike many custom ROMs it works on 16K machines as well. And of course you can use it on 128 and +3 hardware as described above.

Would there be any peripheral compatibility issues (eg, the ZX Printer, the Interface One - in particular, how SE BASIC sits with the shadow ROM - and third party add ons, such as the Disciple)?

SE Basic is designed for maximum compatibility. All the code to do LLIST and LPRINT to a ZX Printer is still

there. I have removed the COPY code because frankly there are better ways to make a hard copy of a Spectrum screen than in black and white on thermal paper these days. As for the Interface One, all the crucial entry points are maintained in SE Basic, so yes, you can still use your Interface One. SE Basic is also compatible with the new ZXATASP IDE interface which uses Garry Lancaster's ResiDOS. In fact Garry was the first to test SE Basic on genuine hardware. :)

What about other Spectrum models (and, indeed, other Z80 machines)? How can SE BASIC be used with machines expecting a 32k or 64k ROM (ie, the 128/+2 and +3/+2A respectively)?

Oops, already answered that (sort of). Here's the long answer:

- 1) SE Basic supports 16K machines too!
- 2) On a 128K/Grey +2 you have several options:
 - a) Put SE Basic in ROM 0 and any other ROM in ROM 1 (could be the original BASIC for nostalgia's sake, or your favourite IF2 game, or a disassembler, whatever you want).
 - b) Put the original Spectrum BASIC in ROM 0 and SE Basic in ROM 1.



You can then access SE Basic with an OUT command.

c) Put a patched version of the 128 editor in ROM 0 and SE Basic in ROM 1. Two suitable editors, based on the Spanish 128 Editor, and the UK 128 Editor, will be supplied in the package.

SE Basic will support printers connected to the 128's RS232 port.

3) If you have a +2A and you don't plan on upgrading it to a +3e (no reason to now really since ZXATASP is out), you have the same options as a normal 128. This leaves you with two free ROM slots to do what you like with. For compatibility's sake I'd recommend putting a modified Editor in ROM 0, SE Basic in ROM 1, a 128 editor patched to work with the original Spectrum BASIC in ROM 2, and the original Spectrum BASIC in ROM 3. This covers all the bases. I should also point out that as well as RS232, SE Basic will support parallel printers on a +2A/+3.

4) If you have a +3 and you don't mind losing +3DOS support you can follow the instructions for the +2A. If you want to keep +3DOS support you can replace ROM 3 with SE Basic after replacing ROM 0 with a modified editor. A suitable ROM set based on

the +3e will be included in the package.

When you refer to a 'modified Editor' for ROM 0 you are referring to the 128k editor, of course - what are the modifications? Is it just a matter of accessing SE BASIC from the main 128 menu where '48 BASIC' used to be, or are the differences more deep than that (ie, is SE BASIC itself at the core of 128 BASIC)?

I hadn't realized it until you asked the question, but of course to the average user it appears that the 128 has two different versions of BASIC. In fact there is only one version of BASIC; the one in ROM 1 (that SE Basic replaces). ROM 0 is referred to as the 'Editor' because that's all it is; a new environment for editing normal Spectrum BASIC programs. With a few exceptions, all of the commands and functions in 128 Basic are called directly from ROM 1. As such you don't need to change the menu, since this just invokes ROM 1. But you do need to change the editor because it expects certain locations in ROM 1 to hold certain bytes, and in SE Basic these bytes are different.

I'm no hardware guru, but as I understand it at least, the four

+2A/+3 ROMs are held on just two chips (I'm not sure about how many chips are used to store the two 128/+2 ROMs - I seem to think it's one, but I could be wrong there): would the trick here be to concatenate ROMs 0 and 1, and ROMs 2 and 3 before blowing them onto the physical chips?

It's one 32K ROM on the 128/+2 and two 32K ROMs on the +3/+2A. Yes you just concatenate the binaries in number order (1 follows 0) before blowing the EPROM.

So what, then, about other z80 based machines - Let's say the Sam Coupe, a z80B machine if I recall correctly - could SE BASIC run on this or be modified to run on it?

Well, in the case of the Sam Coupe, all you need to use SE Basic is a Spectrum emulator and then you just substitute the ROM. However, one of the long term aims of the project is to create executables for other Z80 platforms that would enable at least a small number of Spectrum machine code based programs to run on those platforms. For instance, the Amstrad CPC can currently emulate Spectrum BASIC, but there is no support for machine code. This would only work on programs that address the hardware

via the ROM though, since the display is different and the I/O ports are completely different. I think maybe I should clarify the position on when this is going to happen a bit: SE Basic is Open Source, so if someone wants to do the necessary work, I'll be happy to incorporate it into the official distribution, but I do not have the necessary time or resources to do the conversion myself.

So getting SE BASIC to work with other Z80 machines will require some modifications for each machine used - the end result being a common platform across machines which can run any SE BASIC program. Is that right? I'm guessing the obstacles to this to be the different ways in which the various machines - as you say - handle graphics, etc.

Yes, a common platform. That's the idea.

What about the Timex machines - I know nothing about these, by the way - is the same version of SE BASIC used on these as the Spectrum? For example, is the code you mention that supports extended video modes in the Timex machines 'dormant' when SE BASIC is used with a Spectrum or are there two different versions of SE BASIC, each

customised according to the 'host' machine?

The Timex machines have extra video modes. The same version of SE Basic is used. The code for the extra video modes is about things like making the cursor show up properly in 512x192 mode, having a 6-pixel wide font to support 80 column text in this mode (although via a software extension, not in the ROM owing to space constraints), and setting the default video mode and sideways RAM banks on start-up.

And now a bit about you - what drove you to create SE BASIC?

Well, I got back into Spectrums in 1996 and started programming a font editor (which I've now lost the source to). I didn't know any machine code back then so I wrote it in Basic and compiled it with HiSoft Basic compiler. The thing is, the compiler doesn't support LOAD or SAVE commands, and due to the way the program was organised it would have been very tricky to drop in and out of BASIC to LOAD and SAVE, so I had to learn enough machine code and enough about the Spectrum ROM to write a LOAD and SAVE routine (which I do still have the source for). Anyway, I got a regular internet connection in

1998 and discovered that people had been writing custom ROMs for the Spectrum since 1985, and that the original was unfinished and had quite a few bugs in it. The thing I noticed with the ROMs available then is that none of them fixed **all** the bugs, so I set about writing a ROM that fixed them all. That was the Spectrum +4 48K ROM (the first home brew ROM to be supported as standard by MESS by the way). Of course it turned out that there were lots of bugs I didn't even know about at the time, so the job was really only half done. Then I got the idea of debugging the 128 editor as well. I spent a long time on that project but finally abandoned it as being impossible - there just isn't enough spare room in the 128 editor ROM to fix all the bugs. It's possible on the +3 because the editor is split across two ROMs, but there is very little documentation available for either and by then I'd had enough. However, in the course of my research I discovered what all those letters are at the end of the 128 ROM (the initials of the programmers - I even know all their names now), and that you don't actually need to use the 128 version of 48 Basic in a 128K machine if you change three bytes in the editor (I've done this on my ZX Spectrum SE for compatibility).



Then I got the idea for a new super spectrum, which distracted me for a while (but it's finished now). Then I stopped the project for 12 months while I went to Australia. I picked it up again when I got back but I was still working on it as a series of patches. I stopped the project again for six months while I went off sailing. But I'm back at it now. Having found Geoff Wearmouth's Incomplete Spectrum ROM Assembly and modifying it to compile on ZASM under MacOS 9, I'm now able to provide complete source code for SE Basic, which in turn has made it possible to make the project Open Source.

4a) Clearly SE BASIC has evolved from your various ROM projects; is there an official 'birth date' for it, however?

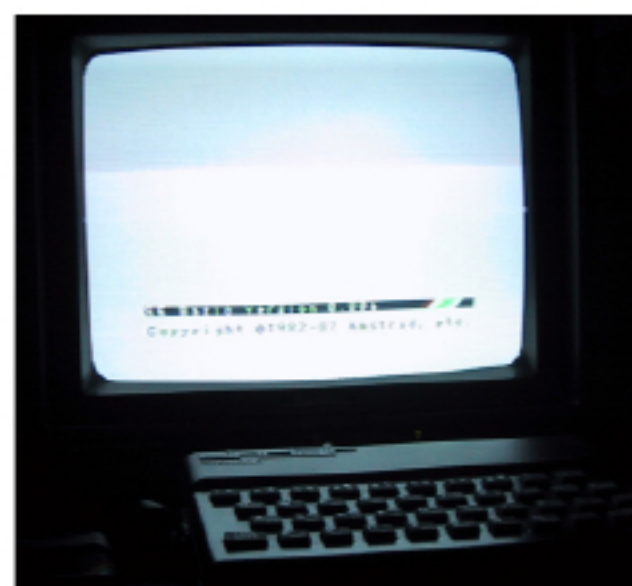
I see SE Basic as the culmination of all the tinkering I've done with the ROM which started back in 1996, so I reckon that's its birth year. I couldn't pin it down to a specific date, but I was fairly busy finishing my degree in the first part of the year so I guess late June would probably be a fair guess. If you nip over to one of the sites which has most of the different ROMs ever made available for the Speccy you'll see a whole host by me, Spanish Pentagon, German 48, +4, Plus 2c, Psion 5, and

possibly others I can't even remember. In creating each of these ROMs I learned something about the original program that helped me to develop SE Basic. In fact a lot of code in SE Basic comes directly from the +4 ROM, so that's why the copyright date on the documentation says 1996.

4b) Who has helped you out along the way?

There are really far too many to list, although not enough people contributing actual code. The main people I have to thank are Steven Vickers for writing such a great version of BASIC in the first place and the accompanying manual, Cliff Lawson at Amstrad for giving me permission to do the project, John Grant at Nine Tiles for answering my questions, the original programmers of the UK 128 editor; Martin Brennan, Steve Berry, Andrew Cummins, Rupert Goodwins and Kevin Males (you can see their initials at the end of the ROM), for answering my questions (as an aside I think some of them got in touch with each other after not having seen each other since leaving Sinclair as a result of my enquiries), Drs Ian Logan and Frank O'Hara for the Complete Spectrum ROM Disassembly, Geoff Wearmouth for creating the Incomplete Spectrum ROM Assembly file, which SE Basic is built on, and for

vast amounts of bug fixes and general advice, Günter Woigk for being the only emulator author to properly support the Spectrum on the Macintosh - SE Basic was developed almost entirely on the Mac using different emulators by Günter and his excellent cross-assembler, Chris Young for being lead Beta tester since forever and coming up with great ideas, Chris Cowley for building Timex support into vbSpec at my behest, just so I could test some of the functions of SE Basic, Slavko Labsky, Ian Collier and all the other authors of other custom ROMs for giving me ideas (and sometimes donating code), and of course all the people who are already using SE Basic. Apparently it's more popular than I'd realised even in its early flawed version 0.70T which was the last public release.



SE Basic 0.83c Summary

Breaks LIST and LLIST support in the 128 Editor. A patch will eventually be made available but until then you should continue to use version 0.80a.

Breaks SCREEN\$ (n,n) support in the SE Basic Compiler. This will be resolved by changing the ROM rather than patching the editor, as soon as I work out what's happening in the compiler runtime. If this causes you problems you should continue to use version 0.80a.

- * Almost all the bugs are fixed.
- * The machine resets much faster.
- * 128-style copyright message.
- * New 6x8 font for use in 32, 42, 64 and 85 column modes.
- * The FREE MEMORY routine is relocated. Call it with:
PRINT 65536 - USR 95.
- * The NMI button calls a default Break routine or you can assign your own routine by poking the address into NMIADD.
- * Keywords are now ANSI compatible.
- * Simplified the keyboard. All the symbols are now available via symbol-shift and the normal key for that symbol. The copyright character is on the 'I' key which does not normally have a symbol.
- * Added a tokenizer and removed 'K' mode. All keywords must be typed in full but macros are available for the most common ones. Commands and functions can be entered in upper, lower, or mixed case.
- * Hid EXTEND mode. Normally has no function but can still be used to get in-line control codes and macros.

- * Added macros to certain number keys with EXTEND+SYMBOL SHIFT:

```
6 - RUN [ENTER]
7 - SAVE "" [<-]
9 - LOAD "" [ENTER]
0 - CLS 56 [ENTER]
```

- * Replaced the letter cursors with block colour cursors as follows:

```
'L' - Blue
'C' - Yellow
'G' - Green
'? ' - Red
```

- * Changed the error cursor to behave like the 128. If you enter a line with incorrect syntax, the machine beeps, the cursor goes red and jumps to where it thinks the error is.
- * Extended the valid line range to 1-16383.
- * Cursors can move up and down as well as left and right in an edit line.
- * Since the 'STOP' token is removed from the keyboard, pressing cursor down during an INPUT A or INPUT A\$ command will produce the token. It will still Break into the program as normal during an INPUT LINE A\$ command.
- * Changed the error messages and the way they are output. Whereas before you might have got the error:

R Tape loading error, 10:1

Now you would get:

Loading error 10:1
- * Prevented the keys V-Z from producing tokens in 'G' mode.
- * Inverted the cursor so it shows up in 512x192 mode on Timex machines.



* Enhanced some of the commands and functions:

- CLS - Now takes parameters. Works as normal without a parameter (defaults to CLS 0) but sets border and attributes with a value from 1 to 255. Produces 'Out of range' error with higher values.
- CONT - Replaces CONTINUE. Works as normal.
- COPY - Now a file command. Takes any syntax. Produces 'Bad device' error unless additional hardware connected.
- DEL - Replaces ERASE. Now takes any syntax. Produces 'Bad device' error unless additional hardware connected.
- DIR - Replaces CAT. Now takes any syntax. Produces 'Bad device' error unless additional hardware connected.
- FORMAT - Now takes any syntax. Produces 'Bad device' error unless additional hardware connected.
- GOTO - Replaces GO TO. Works as normal.
- GOSUB - Replaces GO SUB. Works as normal.
- LIST - LIST only lists the line you name rather than the whole program starting at that line. The full syntax of LIST is:

`LIST [x][,[y]]`
 where x is the starting line number (default 0) and y is the ending line number (default 16383). Produces 'Out of range' error with line numbers greater than 16383.
- LLIST - Equivalent of the new LIST command only sent to stream #3.
- MOVE - Now takes any syntax. Produces 'Bad device' error unless additional hardware connected.

- NEW - Now takes parameters. Works as normal without a parameter (defaults to NEW 0). NEW 1 is the equivalent of PRINT USR 0. NEW n is the equivalent of CLEAR n: NEW. Produces 'Bad RAMTOP' error with values outside the range of CLEAR.
- SCREEN\$ Can now detect UDGs as well as normal ASCII characters. It cannot detect predefined graphics as there is no bitmap to compare them against.

SPECTRUM +3 SOFTWARE AND SPARES



HARDWARE:

3 inch 180K disc drive for +3. Reconditioned with 3 months warranty £10 each. These drives can be supplied with cream coloured facias in place of the black facias if wanted -- just ask.

Belts for the 3 inch drive £1 each. New. Loads available. (Just send a S.A.E. with order to cover postage -- correct for up to 20 belts).

Monitor lead to convert +3, +2 and +2A to use an Amstrad CTM644 colour monitor. £4 each.

3 INCH DISCS:

3 inch Blank discs: Second-hand good quality Amsoft or Maxell only supplied. All have been reformatted, verified and relabelled. 80 pence each or £7-50 for ten. Larger quantities available 100 for £65, 1000 for £450.

Sometimes available new 3 inch discs at £1 each, please ask.

JOHN R P KING

**26, GUYSFIELD DRIVE, SOUTH HORNCHURCH, RAINHAM, ESSEX.
RM13 7AJ**

TEL: 01708 630477 *john@pcwking.freemove.co.uk*

www.pcwking.freemove.co.uk



Back to the Spectrum

Part Three. A look at some of the freeware PC utilities you can use to enhance your Spectrum experience.

Since we concluded last issue's section looking at graphics manipulation this seems a good place to start in our exploration of utilities. Last time we looked at the SCR file format as a means of storing Spectrum screens on your PC and there are plenty of utilities to help you work with these without having to go near an emulator. Of course Windows doesn't recognise SCR files as a valid graphics format (it wasn't written with Spectrum emulation in mind; it will probably try to tell you this a screen saver) so don't expect Windows Explorer to display these as pretty little thumbnails. The very first thing you'll need therefore if you have more than a couple of SCRs in a folder is a viewer program. These won't allow you to manipulate your graphics much, but they will let you look at them. A good example of such a program is ZX Screens by Pavel Pliva, a very simple screen viewer which will display a whole directory of SCR files one after another using the Slide Show option.

In so far as actual manipulation is concerned, there are many titles to choose from. One of my

personal favourites is SevenUP. This programme by Jamie Tejedor Gomez (aka Metalbrain) is a touch on the slow side - even on fast machines - but what it lacks in speed it more than makes up for in features and usability, such as straightforward buttons for changing INK and PAPER colours (and turning on/off FLASH and BRIGHT) and a very useful zoom facility (which adds in a pixel and character grid on high zoom levels - invaluable for pixel-perfect placement and avoiding colour clash).

BMP2SCR (by LCD) also has a built-in graphics editor, but this particular utility's strength lies in its ability to convert bitmap images into SCR files, allowing you effectively to take any image and turn it into a Spectrum screen (see issued two for a worked example of this, using BMP2SCR and SevenUP). There are in fact a number of programs that do this (including the aforementioned ZX Screens), but BMP2SCR employs a number of different techniques to explore, each giving different results. One such approach is the black and white dithering of a colour bitmap, which has been

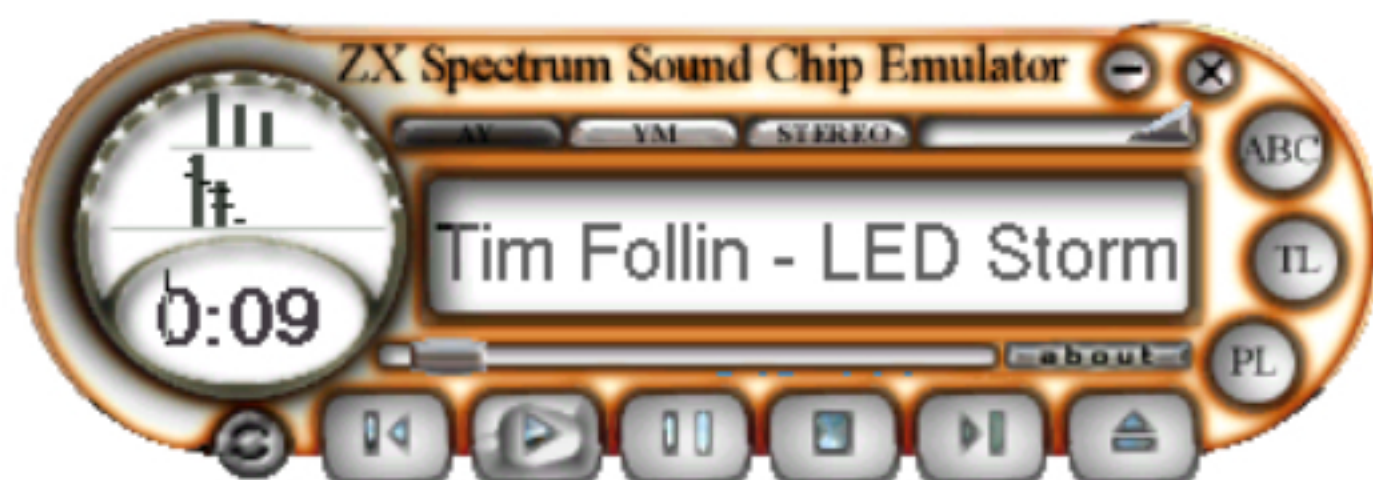
explored still further in Derek Jolly's YASPIC (Yet another Spectrum Image Converter), which allows you to choose between a random dithering technique or Floyd/Steinberg dithering; once your black and white image has been generated you can then colour it (with complete control over INK, PAPER and BRIGHT) and save it out either as an SCR graphics file or TAP virtual cassette file.

Back momentarily to SevenUP: for more advanced users, this program also allows you to design and edit animated sprites (little animated graphics in games - your hero, for example, as he jumps from platform to platform, or the nasty beasties that try to shoot him). The most obvious use of this will be to insert into a machine code game; you could, however, use it to change the sprites in an existing game if you so desire. This particular activity is a process not without its complications, but not quite so arduous as you might think and doesn't necessarily require any knowledge of machine code. Using the excellent Spectrum Graphics Editor (SGE), for

example, a veteran of the Spectrum Utilities scene by Richard Jordan), you can take any Snapshot file and seek out the sprites within, edit them, then substitute them back into the game.

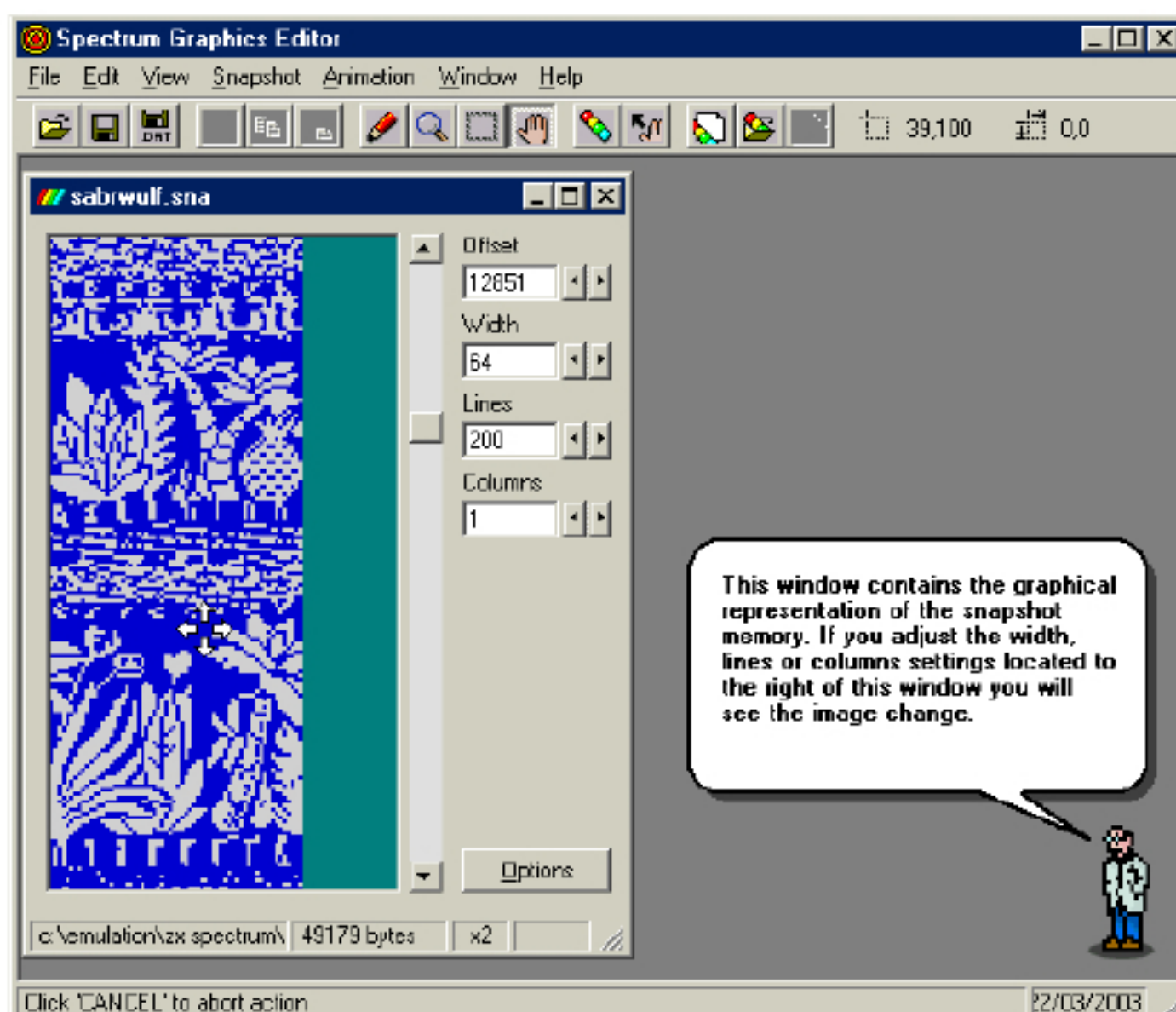
Music

The Spectrum beeper was so famously bad that many seem to recall it is a feature of all Spectrums, rather than just the original Spectrum and the Spectrum plus. Of course with the Spectrum 128 came our very own three Channel AY chip and with it a whole new level of musical possibilities was added to the Spectrum scene. To listen to an AY tune you would ordinarily, of course, have to load up the game it was part of onto your emulator or real Spectrum. Now, however, you can listen to it independently using any number of AY players. AY-3-8910/12 Emulator is particularly powerful because it not only allows you to play a ready made AY files (you can download these, incidentally, from WoS), but also to rip them from snapshot or tape files yourself. It's not just Spectrum games that contain AY music, by



Above: The excellent AY Emulator, banging out a top ZX tune

Below: The Spectrum Graphics Editor roots out Sabrewulf graphics





the way; there is an ever increasing number of demo soundtracks that you can also get hold of through WoS - and some of these are simply amazing (we'll look at the Spectrum demo scene in a future issue).

Organising your games

Now that you have access to literally thousands of Spectrum games via WoS, you might desire some way of organising them. There are a number of games database programs you can use to help you do this, the most well-known of which is probably WoS maintainer Martijn van der Heide's Spectrum Games Database (SGD) for DOS, which not only gives information on the games (author, publisher, etc; the database program itself is empty when you download it, but you can download ready made database files from WoS along with the program), but also link to the actual games files on your system, display their loading screens and allow you to launch them in an emulator of your choice. SGD is a very comprehensive program, but WoS itself is just as comprehensive - even more so in many ways (all games, for example, can be

played online) and if you've a broadband connection you might well find that the web site meets all your research needs.

Tape utilities

Next issue we'll be looking at Spectrum hardware in the 21st Century - both original and new hardware - for those who feel the emulation experience just isn't quite enough. As we'll discuss then, the trade in Spectrums and peripherals on such auction sites as ebay is quite intense; plenty of people are using real Spectrums alongside or even in preference to emulators.

Of course it's easy to get hold of software for your *emulated* Spectrum. But how - other than through ebay/car boot sale/charity shop purchases - can you get hold of Spectrum software to run on your *real* machine? Actually it's very simple, because you can use those very same .TAP or .TZX files you downloaded for your emulator. All you need is a long enough 3.5mm mono jack cable to connect your Spectrum's ear socket to your PC's speaker out socket (I use the length of

'networking' cable that came with my Interface 1) and a DOS utility called Taper (also, incidentally, by Martijn van der Heide). For the purpose of loading programs onto a Spectrum, Taper acts as a sort of virtual cassette recorder for all those files, producing crisp, clear tones that the Spectrum at the other end of the line just gobbles up. Taper works every time for me, although of course Windows XP users will not be able to use this program without a suitable DOS emulator.

This isn't the only thing that Taper does, by the way. You can also reverse the direction and play Spectrum tapes you own into taper to create a tape file for your emulator (you might like to do this if you own any of the titles whose distribution is denied, for example, or if you have any programs you wrote yourself which you would like to share or preserve). this particular feature of Taper is less well supported across the range of PC audio hardware; my own personal setup, for example, has its own integrated soundcard in the motherboard and Taper simply refuses to acknowledge it.

Interlacing

A few discussion threads recently prompted me to find out about this apparently marvellous graphics technique. Here's a short summary.

But fear not - there are other freeware programs that you can use to convert your real tapes into virtual cassette files (such as MakeTZX by Ramsoft, the team behind the RealSpectrum emulator). And if making an *exact* copy of your tape isn't an issue - if you simply want to preserve a copy of a program you wrote - you can always try loading it into an emulator that accepts external audio and then save it back out into a new tape or snapshot file: I use Spectaculator for this, which works - and works superbly well - where just about everything else fails on my hardware. Spectaculator version 5 will also play out tape files to your real Spectrum, just like Taper.

Needless to say, all of the programs discussed can be found at WoS. point your browser to www.worldofspectrum.org/utilities.html for a complete list of these and others.

Next issue: hardware.



A Spectrum screenshot? Yes! This, a graphics demo by **Blacker** (presented at **Forever Quattro** in March) is perhaps the best example I've seen so far of *colour interlacing* I've seen so far. This is kind of the visual equivalent of the way 48K Spectrum programmers used to get around the beeper restriction of only one sound at a time by quickly switching between different notes to make it sound as though two were playing together (albeit with a bad case of the hiccups). Instead of notes, read colour. By switching very quickly between, say, red and yellow, a passable orange will appear.

it's a fancy effect, but of limited practical use in games. By combining two colours you're effectively halving the frequency of the screen refresh in that area, which means there can be quite a lot of rather distracting flicker. The method is also very memory and CPU hungry, particularly if you're covering a large area, leaving you with few resources to deal with rather important things like sprite animation. But it can be used to good effect: *Magicland Dizzy* used it for the small flames on wall torches - and flames, of course, are *supposed* to flicker...

Downloaded Blacker's demo from www.zxdemo.org/party.php?id=38



The Prism VTX 5000

A **css** post made recently by **Brian Gaff**, who knows a great deal about this piece of hardware since he used to maintain the **Micronet** service it connected to. The VTX tends to go for a number of notes on **ebay**; read on and become informed...

VTX5000 is a V23 manual connect modem designed for the Spectrum 16 and 48K computer. It has viewdata software, configured for the now defunct Micronet service on an 8K EPROM inside. It connects via the expansion port via a three way ribbon cable and derives all power via it. V23 is basically 1200 baud down-link from the service, and 75 baud uplink to the service. This is because, in the main, only very low bandwidth uplinking was envisaged.

It included a CET download routine that meant Spectrum software could be received over the 7bit system with full error checking and it ended up in the Spectrum RAM. The saving of said software was left to the person who 'built' the download file. I used to do it using a modified Multiface, or hand craft it if only basic and unprotected code was involved.

The device has a switch on the front that is manually operated for going on-line. It is only pushed down when the computer at the other end is heard, via your tele-phone, which is

how you dial.... and then it has a timer that drops the line if nothing recog-nisable as data is heard after a few seconds. Very friendly!

The other switch, marked TX and RX is not used by the internal software. Neither of the above modes should be selected to use normally. RX is purely for receive of 1200 baud, so you could, for instance, use it to see what another modem sees, ie like a phone tap. The TX mode is much more useful, but can only be accessed with other software.

TX is in fact a 1200/1200 half duplex mode, which is switched with software. User to User transfers can be done this way with both modems switched like this and there were three sorts of software for this, all mainly available on other systems as well as Micronet.

U2U was the Prism one. *Dialsoft* was distributed by 'Your Computer' magazine, who also had a download service for it called *Telsoft*. *Modem* was just what it said - the X Modem protocol. Of course none of these had the 7 bit constraints of viewdata BBs or Prestel, so the transfers were generally faster.

Software for scrolling type BBs was also available and also software to generally improve the internal software were around, many written by Chris Pile and Dave Gorski amongst others.

There were modifications for auto answer so some specialised 'Micron' BBs could be run off a Spectrum using the half duplex mode and either Microdrive storage (slow to the point of narcolepsy) or a third party disk system.

I doubt if any modem out there now could connect to the VTX 5000, but it is still viable to do user to user transfers of Spectrum sized files of course, using the half duplex software, and saves transferring stuff to a PC and back if two peeps are working on a program.

It will not run on the 128K for two main reasons, First, the ROM paging jumps back to an address that just crashes the Spectrum, as the VTX pages in to copy software at power up and reset. The capacitance of the bus on the 128, coupled with the high fan out loading is just too much and the ribbon cable often just locks the machine up when connected. Some

min spec NEC Z80s can improve it a bit, but it is always flaky.

The +2 is better in the way it was designed, and can, most of the time, cope with the VTX, but it has been designed so the jump back into the Spectrum does a reset, which means that in order to get the software in from ROM, you need to do an OUT to port 21 (but I've forgotten what it was!) Later Spectrums, rather perversely, would have worked with the internal ROM, if the power supplies had not been moved about on the edge connector and the ROM CS replaced by two lines... I did design a device to fix this, but it meant that when you powered up, the machine jumped straight into 48k and paged in the VTX... So a lot of folk removed the ROM link and went with disc loaded software. Of course, this meant that any loaded software that called the VTX ROM, only ran with the ROM link connected...

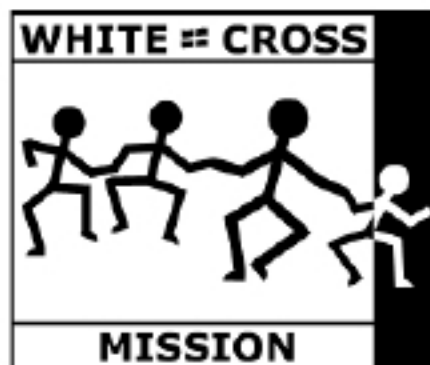
The Melbourne House book, *The Spectrum Micronet Book* will give you all the detail your heart could desire...if you can find a copy.

Brian Gaff



Below: The Micronet team. To read the Micronet story, visit www.sincuser.f9.co.uk/032/micront.htm





After Ceaucescu's death in 1990 over 120,000 children were discovered living in grim institutions. In the county of Jud Bihor in Western Romania, children who had been assessed as 'mentally retarded' at the age of three were sent to an institution in the country village of Cadea. They were housed in old buildings that had broken windows and no heating or plumbing. It was dark and dirty and for the majority of the time the children were confined to their cots. Most of them were tied to the bars by strips of cloth tied tightly around their wrists and ankles.

The children were always dirty, hungry and cold - sixty to seventy died every winter. Their original 'retardation' was the result of early illnesses such as pneumonia and bronchitis, and years of confinement at Cadea only compounded the problem. When they were finally released in January 1991, many could neither walk nor speak. All of the children rocked backwards and forwards in their distress; their eyes were glazed and unseeing. On release, many of the children were sent to hospital buildings in the mountain villages of Remeti and Bratca. It is here that the White Cross started assisting the local Romanian staff in their care.

Since the White Cross has been working with the children, over 600 people have travelled with the Mission to Romania. Some have only been able to give a few days of concentrated work, most average two months and one stayed for four years! Some work with the children, others repair the buildings and yet others deliver goods. Every volunteer is special. They raise their own money for air and train fares, insurance, food and electricity and more than half of them do it all over again and go out for a second or even third time. Old or young, with or without qualifications, the combined work and presence of these many different people has had an amazing impact on the children.

Children with blank, unseeing eyes, rocking in a world of their own are now healthy, laughing and boisterous. The accumulative effect of the White Cross volunteers with their mixture of naivety and experience, their energy, their perseverance, their hopes, their dreams and their many different ways of showing love has created a rainbow effect of bouncy, confident and individual children.

Fundatia Crucea Alba has helped White Cross Mission with the legalities of purchasing small farms, employing assistants and moving children from the mental institutions in order to live a normal family village life. We intend that these farms will be the children's homes for as long as they need. All their lives if necessary.

Buying the farms is only the beginning of a lifetime commitment to those children we take out of State care. Without a regular financial safety net we would be irresponsible if we established too many homes. We do, however, believe that this is the only way forward and are desperate for substantial funding.

The White Cross Mission is a Charitable Trust Registered in England No 1021176
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